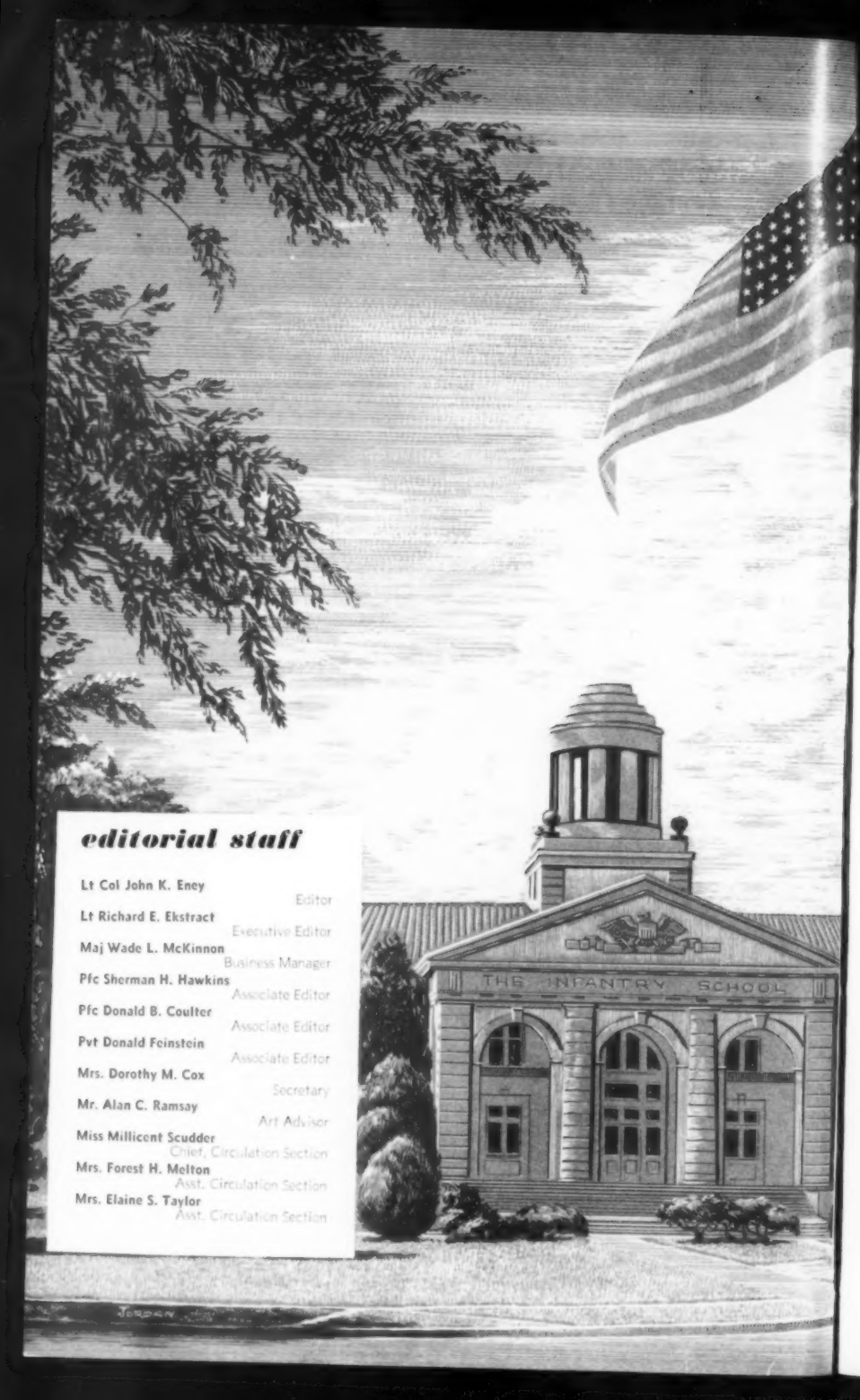
Infantry

school quarterly

JUL 8 1955

the magazine for infantrymen



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THE

Infantry

SCHOOL QUARTERLY

volume 45 number 3 july 1955

the infantry school

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letters

January Editorial

Department of the Army
Office of the Chief of Chaplains

Sir:

The editorial message on page 3 of the January 1955 ISQ was most appropriate for the first issue of the year and very well expressed. All too often, the public's memory needs a reminder that "the man who wears a Combat Infantry Badge knows God well—because he needs Him so often." If it is agreeable with you, I should like to make this message available to the religious publications which have indicated an interest in the army's religious program.

Patrick J. Ryan
Chaplain (Major General), USA
Chief of Chaplains

The editorial referred to represented our reaction to the photograph which ultimately appeared opposite it. While the religious theme was a departure from our usual material, it did seem the right way to start the new year. The message was made available to the Chief of Chaplains and, at this time, we wish to acknowledge publicly our thanks for his interest.—Editor.

Vignette

QM Library
Fort Lee, Virginia

Sir:

Reference the editorial picture on page 4 of the January '55 *Infantry School Quarterly*. By coincidence, I had just finished reading the Italian Campaign portion of the History of the 3d Division —the photograph is used in it. The soldier is Pvt Paul Oglesby, then with the 30th Infantry Regiment, 3d Division. He was later promoted to staff sergeant.

John W. Ault
M/Sgt, RA

Thanks. Now all we need to do is locate Sergeant Oglesby and find out what he's doing—then our story will be complete.—Editor.

Correction

Fort Benning, Ga.

Sir:

Reference "What's New," April 1955 issue. The designation "Recoilless Rifle Platoon" has been changed to "Antitank Platoon."

William S. Terrell
Lt Col, Inf

The change went into effect after the magazine went to press. As further reference note "Power Plus" on page 83. —Editor.

Meet the Artist

We predict that Cpl Peter Baka's work will soon be found in many commercial magazines. His paintings on the front and back covers of this issue not only display outstanding talent and ingenuity, but a polished commercial style.

Cpl Baka attended the Cleveland Institute of Art on a Ranny Scholarship and graduated in 1953. Before entering the army, he worked for a Cleveland advertising agency as an illustrator. We believe you will agree that his back and front covers are in keeping with the highest *Quarterly* standards.

... to the editor

Calling All Authors

North Park Station
San Diego, California

Sir:

All of my articles may not hit a V-5 on the editorial target. I've read enough ISQ's to be well aware that it publishes only the best. Vide that beautiful, precedent shattering verse, "Soldier" (January '55). Ditto, "Invasion," an arresting paper in any man's publication.

Herbert E. Smith
M/Sgt, USA, Ret.

Sgt Smith did hit the editorial bull's-eye—see "Company Commander" on page 56. It should qualify as another precedent breaker. All potential authors will be interested to know that we pay top rates for published manuscripts. You don't have to be an Ernest Hemingway or a Robert Sherwood, either. Just furnish the ideas in readable style, we'll apply the blitz cloth.—Editor.

VIP Visit

According to available intelligence, neither of two recent visitors knew each other, but Col Norman G. Wilson-Smith, Director of Infantry, Canadian Army and Col Joseph C. Anderson of the US Army, Office of the Secretary of Defense, each left us with an identical statement.

Col Wilson-Smith informs us that he plans to bring the ISQ to the attention of all Canadian Infantry battalion commanders. Col Anderson, who came by to renew his subscription, tells us that he will soon join the 10th Division (Fort Riley, Kansas) and feels that the ISQ is a *must* for commanders. The identical statement? Each said, "All Infantrymen should read the ISQ."

First With the Latest!

Netherlands

Sir:

Congratulations on — "Mobile Defense" (January 1955). This is indeed the latest Infantry tactical development.

K. T. Vanoyen

Questionnaire

Marine Corps School
Quantico, Virginia

Sir:

The Infantry School Quarterly is one of the few professional magazines that gets down to the hard practicalities of Infantry combat. Your questionnaire sparked this note. After filling it out, I thought you should know how much I enjoy the good, solid information found in the ISQ. I tout the magazine every chance I get. After all, we Marines are all Infantrymen too.

Patrick C. Roe
Capt, USMC

The questionnaire referred to is one we send to readers periodically. Our object is to see if you think we're doing our job. What's more, it puts us in a better position to anticipate your needs. All of your answers are carefully tabulated and are used to chart our future editorial course.—Editor.

Editor's Page

Dear Reader:

NO MAGAZINE is any better than the material it publishes. The most sophisticated artwork cannot disguise a weak article. No amount of fanfare will add one iota to the prestige of a magazine that is neither wanted nor fills the needs of its readers.

In the past two years our circulation has quadrupled. This phenomenal rise may be credited almost entirely to word-of-mouth reader advertising. This we regard as an endorsement of *The Infantry School Quarterly* and recognize it as the finest compliment that can be paid.

Good ideas, palatably presented, are a magazine's staff of life. The weapon shown on the opposite page is proof that we can never underestimate the power of an idea. Ideas that receive the proper audience may profoundly affect the development of weapons and change tactics. For Infantrymen, we know of no better showcase for ideas than *The Infantry School Quarterly.*

Someone once told us that an idea a day keeps the wolf away. To us this sounds eminently practical. We feel that dollars make sense—especially when you are on the receiving end. In keeping with our rise in circulation, we have increased authors' fees considerably. If you want the right audience, professional recognition and a sizeable check—send your articles, or article ideas in outline form to *The Infantry School Quarterly.*

The Editor

The Corporal, the U S Army's surface-to-surface guided missile in flight at White Sands Proving Ground, New Mexico.

The Day

Capt Carl W. Borchellor

TEN . . . nine . . . eight . . . the seconds ticked away. Three . . . two . . . one. Almost without notice a dark object fell toward the earth. In a few moments there was a shattering, twisting blast of unparalleled fury. A gigantic, nebulous billow of smoke sprang skyward from the devastated Japanese soil.

Time—6 August 1945. Place—Hiroshima. Event—the birth of a new age in the history of man . . . the Atomic Age.

That was an unforgettable day. Man had developed a successful atomic bomb and a startled world knew it. Since then the "atoms for war" race among nations has represented a horrible tribute to this scientific era.

Any global conflict in the future might involve the use of atomic power on both sides. And not only in bombs, for atomic energy has been (and is being) converted for use in many types of weapons.

The Sky Fell

Will these new atomic weapons influence our offensive tactics?* No one knows for sure, but military leaders do have some ideas on how our tactics will evolve to meet these changing factors of modern warfare.

Let's see what might have happened at Anzio in the Spring of 1944, had atomic weapons been in vogue at that time.

A US regiment is attacking an organized enemy position. That regiment . . . the 40th Infantry** (part of our 14th Division), landed successfully and is now behind the enemy's beach defenses. Plans call for seizing the high ground which dominates enemy lines of communication to forces opposing the 12th Army. The hope—that enemy forces will withdraw . . . thus facilitating 12th Army's advance. This hope is not realized.

The enemy stays put. His forces in this defensive sector have been increased from

an estimated 40,000 to nearly 70,000 troops. Intelligence reveals that he is also building up his atomic stockpile. To date he has not used his atomic capability in this area, but has used it elsewhere with limited success. This limited success is apparently the result of the excellent atomic indoctrination of our own troops, our dispersion and prior tactical training. To date we have not employed our atomic capability.

It is decided that our forces will attack. The 40th Infantry, now in reserve, is elected to make the division's initial thrust. Intensive, behind-the-line training begins for all units.

Five atomic weapons will support the attack of the 40th Infantry for this operation. Orientation on their use is being conducted by special atomic weapons advisor teams from higher headquarters.

It is now D Day-30.

The regimental commander, Colonel Frank Wright, a lean, suntanned man in his late thirties, returns from his initial orientation on the proposed operation. He summons his staff and commanders for a conference. The conference begins:

"Gentlemen, our division has been selected to be the first US unit to exploit the use of atomic weapons, and our regiment will make the initial thrust. Here's what we need to do in order to prepare ourselves.

"During the next few weeks, I want continued emphasis placed on the following subjects: Intelligence, Communications, Small Unit Tactics, Combined Arms, Use of Smoke, Physical Conditioning and Night Operations.

"Yes." The colonel paused and looked at his S3. "I know we covered these things in the States, but we need to refresh these items in the minds of all our men. There can be no slips.

"Every officer and man in this regiment must realize the value of INTELLIGENCE. With close-in atomic support, the importance of combat intelligence is magnified. Counter-intelligence also becomes an item of increased importance.

"COMMUNICATIONS take on added importance when we consider our increased dispersion and mobility. Control must be maintained. Even here in our reserve position, we want to keep spread out to avoid presenting a lucrative atomic target.

"Because of increased dispersion and the nature of our forthcoming attack—we must place strong emphasis on SMALL UNIT TACTICS.

"As I see it, COORDINATION with other arms is imperative. If we are to move with maximum speed to take advantage of the destruction and shock effect of our atomic weapons, this is a must.

"Our COMBAT ARMS TEAMS must be well rehearsed. They must also be capable of great flexibility, since different phases of this operation may require an equally different combination of combat units. Every commander must be prepared to reorganize rapidly at various times during this action.

"I believe we should prepare to make extensive use of SMOKE—this, however, remains to be seen.

"You will all recall that I've been a bug on PHYSICAL CONDITIONING. If anyone ever wondered why—I'm certain this operation will supply the answer. Don't slack off now.

*See "Mobile Defense" (*The Infantry School Quarterly*, January 1955) for new defensive concepts and "Look Toward Tomorrow" (April 1955 issue) for some excellent background material for this article.
**This mythical attack is based somewhat on the actual operations of the 30th Infantry Regiment during the "breakout" from the Anzio (Italy) Beachhead on 23 May 1944.

by a latter-day Jules Verne

"In the States we did a great deal of NIGHT work. As I see it, here's our chance to use night movements as a means of achieving surprise—so damned essential in this type operation. Our own night patrols and the detection of enemy night patrols are important.

"I don't want anyone underrating the capabilities of atomic weapons. On the other hand, I don't want anyone overrating them. If the enemy does use atomic weapons before we attack, or retaliates after we use our own capability —our men are adequately trained to take the measures such as camouflage and dispersion which will be necessary for them to protect themselves.

"That's it, gentlemen—for now at least."

The conference is over.

During the days which follow, the regiment and its attached and supporting elements prepare for the attack. These units, already well trained, are now in a high state of combat readiness. Plans for the operation are firm.

The date: D Day-25.

Colonel Wright calls his commanders together and gives them the attack order (see Figure 1).

"Gentlemen, each of you has a copy of my attack order. If you have any questions, feel free to ask them as soon as this conference is over. Right now, however, I want to expand on the order a little.

"Because of the fire support available and the nature of the terrain we must cover, I plan to use, as our axis of advance, the high speed approach (through CISTERNA) to the deep objective at CORI. We must move fast! (See map.)

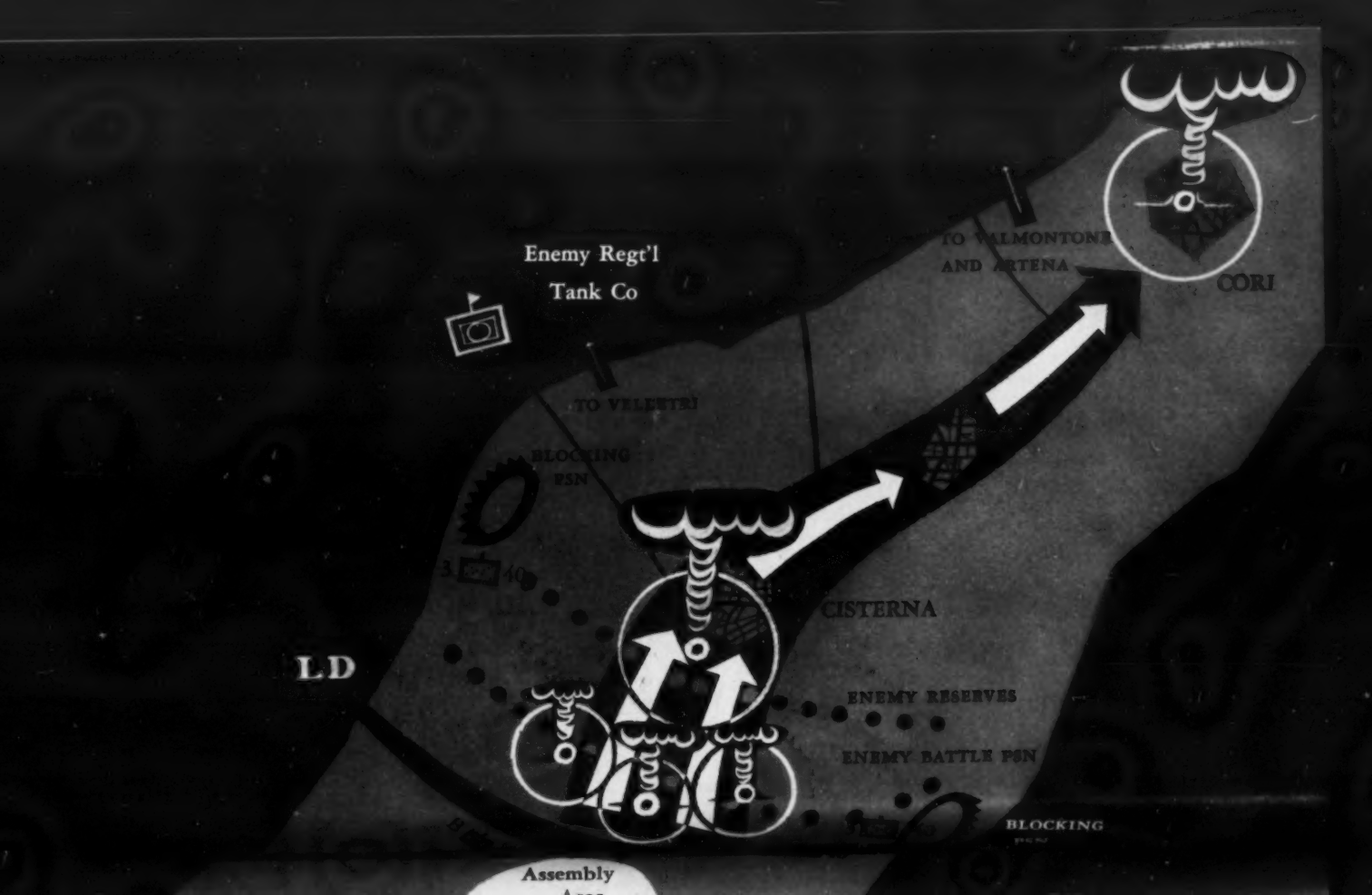
"I will reinforce the 1st Battalion with the Regimental Tank Company minus one platoon, a company of engineers, two platoons of the Heavy Mortar Company, the Intelligence and Reconnaissance Platoon, the Antitank and Mine Platoon, one platoon of the AAA AW Company and, of course, one of the special weapons advisory teams."

Colonel Wright turned to Lt Col Harry Keith, 1st Battalion CO, and said, "Harry, how do you plan to lead off?"

Keith was quick to reply, "My battalion is going to need a tank-Infantry unit out front, with an Infantry company riding right on the tanks. We'll need all the speed we can get in this advance, if we're going to get maximum results from our atomic blasts. Next in line will be the AT&M Platoon and engineers . . . followed by one platoon of the mortar company. We will have a rifle company follow them and our AAA will be interspersed throughout the battalion. The I&R Platoon will protect our flanks."

"OK, Harry, that is a good general idea of how our battalions should move out. The important point I want to reemphasize is that company-sized combat teams must be readily formed to handle tasks we might logically expect to occur. Keep this in mind when you plan formations.

"At H–15 (minutes) the 1st Battalion must begin its forward movement in order to cross the LD at H Hour. The lead elements will necessarily be Infantry and tanks because we've got to break through as fast as possible. Minefields will be marked and cleared (where necessary) by engineers or the AT&M Platoon. The AT&M Platoon might well be attached to the engineer company. This, I believe, will facilitate close coordination between these two units and simplify the command structure.


Enemy Regt'l
Tank Co
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AND ARTENA
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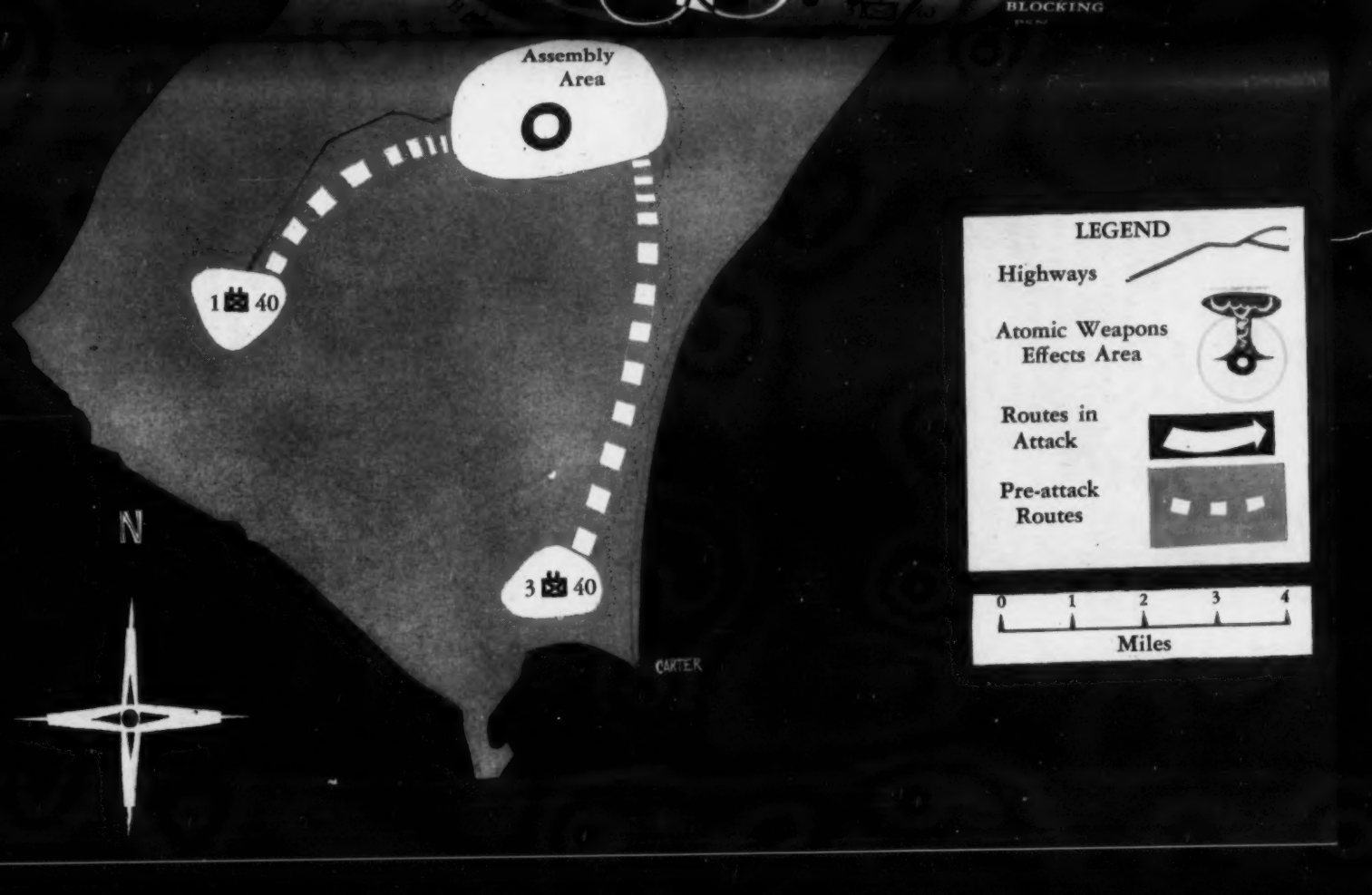
BLOCKING
Assembly Area
1 40
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CARTER
LEGEND
Highways
Atomic Weapons Effects Area
Routes in Attack
Pre-attack Routes
0 1 2 3 4
Miles

"Get your tanks moving forward early. The rest of the motorized column can follow. Don't let vehicles cluster or bog down movement by cluttering up the area. Movement control must be planned to the last detail. Have a responsible officer charged with supervising and coordinating movement during the entire march.

"I am going to airlift the 2d Battalion by helicopter—minus heavy equipment—to CORI, the regimental objective. We are counting on our atomic weapons to cause at least 50% loss of the enemy's front line combat effectiveness—through injury, confusion and loss of control. At the objective, the 2d Batallion will prepare a bypass around the city, outpost the road to ARTENA and VALMONTONE and prevent scattered enemy from infiltrating out of the combat area.

"The 3d Battalion, reinforced, will move to the assembly area on order. Be prepared to mop up behind the 1st Battalion and outpost the left flank of the regimental area northwest of CISTERNA. Pay particular attention to blocking any enemy armor that might move in from the direction of VELLETRI. The 3d Battalion will also furnish units to assist the I&R Platoon in maintaining contact with adjacent units. I am assigning the 4th platoon of the Regimental Tank Company to the 3d Battalion.

"The regimental motor officer will be movement control officer. He will coordinate with the S3 in preparing march tables, route check points and establishing priorities for all movement within the regimental zone. One platoon from the division MP Company will be under his supervision.

"The communications officer, assisted by the battalion commo officers, will set up relay systems and set up a communications cover plan to include the period immediately prior to the attack. Routine operational messages should go by messenger or wire only.

"All units must move rapidly to exploit the effect of our atomic weapons. Intelligence reports indicate the enemy has not done this when he has used his atomic capability. This may be the reason for his limited success. Unit commanders must not slow down their advance by stopping to fire and maneuver if a few defenders continue to fire. I believe we must regard our atomic weapons—supplemented by artillery, mortar, tank and recoilless fires—as a lingering base of fire. Do not let the attack turn into numerous time-consuming little scraps that might slow down the attack's momentum. If groups of defenders do continue firing, by-pass them and let your follow-up unit handle them.

"We will use tactical smoke to screen our rear areas and forward movement from enemy points of resistance. A blanket of smoke will be thrown over the entire operation zone upon capture of the objective. Additional smoke screens will be used for purposes of deception in order to protect friendly units. Then too, if the enemy uses atomic bombs—the smoke may help to cut down the ensuing thermal effects. Any questions, gentlemen?"

"Yes. I have two, Colonel."

Colonel Wright looked toward the speaker, Lt Col Harry Keith, 1st Battalion Commander.

"OK—what are they?"

"First, I'd like to get your thoughts on our company and platoon formations. How far out should they be spread?"

"Well—so far as the type of formations and the distance between individuals and units are concerned, I believe they will be similar to those we would consider if atomic bombs were not used. However, I do think some minor adjustments will have to be made in order to

CLASSIFICATION
(No change from oral Orders)

Copy No 1 of 12 Copies
40th Inf
CP (61384-2)
281300 Apr 44
4ECM

Operation Order 49

Maps: ITALY, 1:50,000, CORI 158 I & FOGLIAND 158

1. SITUATION

a. Enemy Forces:

(1) Enemy can support his defense with atomic weapons delivered by guided missiles, artillery or aircraft.

(2) Annex A, Intelligence.

b. Friendly Forces:

(1) 14th Inf Div attacks 230615 May 44 to seize high ground vicinity CORI and VALMONTONE and secure bridgehead over TIBER vicinity ROME.

* * * * * *

(6) 658th FA Bn (280mm gun) attached 14th Inf Div.

(7) Annex B, Fire Support Plan.

c. Attachments and Detachments:

(1) Btry A, 441st AAA AW Bn attached effective 091000 May.

(2) Co C, 10th Engr C Bn attached effective 081400 May.

2. MISSION

40th Inf (reinforced) attacks 230615 May to seize high ground vicinity CORI.

3. SITUATION

a. 40th Inf attacks with 1st Bn to seize CISTERNA; after atomic air burst in vicinity CORI, 2d Bn will be transported by helicopter to CORI; 3d Bn will be in reserve.

b. 1st Bn:

Attached: 1st and 2d Plat, Hv Mort Co
Tk Co (—)
I&R Plat
1st Plat, Btry A, 441st AAA AW Bn
Co C 10th Engr C Bn
AT & M Plat

Attack to seize CISTERNA.

c. 2d Bn:

(1) Air lift by helicopter to seize CORI on order.

(2) Prepare bypass around CORI.

(3) Outpost roads to ARTENA and VALMONTONE.

(4) Block enemy withdrawal from combat area.

d. Hv Mort Co:

(1) Attach 1st and 2d Plat to 1st Bn.

Figure 1 **Operation Order (continued on the next page).**

Figure 1 Operation Order (continued from preceding page).

(2) Co (—), general support.
(3) Initial positions vicinity FORMING AREA.

e. Tk Co:
(1) 1st Plat attached to 3d Bn.
(2) Co (—) attached to 1st Bn.

f. I&R Plat:
Attached to 1st Bn.

g. 1st Plat, Btry A, 441 AAA AW Bn:
Attached to 1st Bn.

h. Co C, 10th Engr C Bn:
Attached to 1st Bn.

i. AT & M Plat:
Attached to 1st Bn.

j. Regimental Reserve: 3d Bn:
Attached: 1st Plat, Tk Co
(1) Move to assembly area on order.
(2) Follow 1st Bn, on order.
(3) On order, outpost flank of regimental area northwest of CISTERNA.

k. Coordinating Instructions:
(1) Entire zone of operations will be smoked upon seizure of objective.
(2) Notify troops of employment of atomic weapons no sooner than 30 minutes prior to detonation.
(3) Bypass small groups of defenders.
(4) Annex C, Operation overlay.

4. ADMINISTRATION AND LOGISTICS

* * * * * *

5. COMMAND AND SIGNAL

a. (1) Index 1-4, SOI.
(2) Messages by wire or messenger only.

b. Battalions report CP locations.
(2) CO will be with 3d Bn initially.

WRIGHT
Col

ANNEXES:
DISTRIBUTION:
OFFICIAL:

A. Intelligence
B. Fire Support Plan
C. Operation Overlay
A
1st Plat, Btry A, 441st AAA AW Bn
Co C, 10th Engr C Bn
Hughes
S3

CLASSIFICATION

facilitate rapid movement. If you hit only limited fire, I think you should use squad and platoon columns. Should you receive sporadic mortar, artillery or small arms fire—extend your formations. If you run into sizeable centers of resistance —call for artillery, but by-pass them. Leave them for our follow-up troops."

"Colonel—what about our flanks in such a deep and rapid attack?"

"That's a good point, Harry. I believe that our normal approach march security precaution will be adequate. If by chance you elect to move on two or more routes parallel to our direction of attack, let me know. Of course, I'll follow your progress by air from my helicopter."

The conference is over.

Planning and coordination continue. Everyone knows the last minute detail of his job. It has been agreed to mesh the fire plans of the atomic and conventional artillery with the plan of maneuver.

Air bursts are selected for all targets. A request that a surface or sub-surface atomic weapon be used in the CISTERNA area (the enemy occupies the deep caves in this vicinity) is rejected since regiment plans to use CISTERNA as a communications center and the road net running through it as the route to CORI.

It is D Day. The attack begins . . . but to see what happened, let's look at the report of an impartial observer, Major General C. T. Charles, to the Chief of Staff, US Army:

D Day+5
Washington, D.C.
(See map.)

". . . The enemy's reaction to this well planned attack exceeded expectations. Our forces 'leaned into their fires' and took advantage of the confusion and advanced rapidly.

"Initially, Company A riding tanks (Regimental Tank Company) met the least resistance. In Company B's area, the enemy was well dug in and close to our lines—they offered considerable resistance. Our forces used heavy artillery and smoke—this combination enabled them to move forward.

"As both of these units neared the *ground zero* areas* their speed increased. Within the area, it was slowed because of debris. The engineers and AT&M Platoon concentrated their efforts on clearing one main route through these areas to facilitate movement.

"Company C task force followed Able and Baker Companies. One engineer platoon joined the column.

"The 2d Battalion was airlifted as originally planned and was able to seize and hold CORI until the 1st and 3d Battalions arrived.

"The 3d Battalion followed the 1st Battalion. Small task forces were dispatched by the 3d Battalion to blocking positions as shown on the map.

"Within 24 hours the mission was complete and the 40th Infantry held the flanks of the beach. Another regiment exploited immediately.

"It was, for the enemy, the day the sky fell.

CAPTAIN BORCHELLOR regards this article as a first step in a field that will require much more investigation. We feel it's a *big* step in the *right* direction.

The author, a 1948 ROTC honor graduate, University of Miami, has been a platoon leader and a company commander. He is now Assistant PMS&T at his alma mater.

*Ground Zero. The point on the ground at which the atomic explosion takes place.—Editor.

"In talking with the 14th Division Commander, his staff, and with members of the 40th Infantry, it is apparent that the use of our atomic capability requires more detailed planning than in the past. To ensure success, operation orders must be issued well in advance to provide rehearsal and training time. It is imperative that each unit be in the right place (with proper equipment) at precisely the right time.

"This attack prompted some observations that may be worthy of more detailed consideration. For example: should organic mortars be employed during the initial phase of such an attack, or should they be carried forward to cover deployment on the objective and/or mopping up operations?

"We found that, as in the past, with support fire neutralizing the effectiveness of almost all the hostile forces in a zone of action, the need for a main and secondary attack becomes less pressing. This enables the attacking commander to leave a large share of his troop strength well dispersed in a reserve area, which not only gives protection against the enemy's possible use of his atomic weapons but provides a sizeable reserve.

"It is probable that in such operations we may be inclined toward the use of one element forward and two in reserve.

"Another observation is that our zones of action might well be increased—certainly to the limit of our available atomic support. It would seem, based on this offensive operation, that assault battalions will be responsible only for securing an assigned objective and for clearing out all hostile forces in that area. It is imperative that this assault battalion reach its objective as rapidly as possible. Elements of the reserve, it would appear, should be assigned mop-up duties.

"In this operation I consider the use of atomic weapons as trumps, but the ace of trumps was the painstaking manner in which the operation was conceived, planned and executed."

Publication of this fictitious article is not to be interpreted as reflecting the opinion of The Infantry School or *The Infantry School Quarterly*. It represents the author's concept of what tactical atomic warfare may be like.

CORRECTION

Many readers have written asking for the complete solution to Major James R. Pratt's stimulating "How Would You Do It?" (*The Infantry School Quarterly*, April 1955). Through an oversight, the answer to Problem 3 failed to appear in print. Herewith our apologies, the problem and Major Pratt's solution.

Problem 3

As Commanding Officer, Company A, which one of the following do you do?

(a) Remain in your present defensive position.

(b) Leave your position and fight your way back to join the rest of the 15th Infantry.

Solution

(a) Yes. Your present position is already prepared for all-around defense. You would redistribute your troops so that some of the supplementary positions would be occupied, to be prepared to meet an attack from any direction.

(b) No. You realize if you leave your prepared position and move into the open, you will meet the enemy on equal terms. This would mean any advantages you had would immediately be lost.

Maj F. M. Watson and
Lt Bennie R. Bridges

WHO ARE WE FOOLING?

KOREA, 1952 . . . . A column of American tanks moves up a narrow road. . . . Suddenly an explosion rocks the foremost tank—mines! The column grinds to a halt. Little figures scatter out ahead, crouching, probing. One waves a mine detector like a dowser in search of springs. Yard by yard, the path of safety emerges. To prevent mishaps, a guard is posted at the mined area. Cautiously the column grinds forward. As it clears the

field, the guard swings aboard the last tank. It disappears over the next hill, and the minefield is left unreported, unguarded, unmarked—a terror in the ground. Of course, the next American outfit to pass that road will find it—the hard way. . . .

Mines are . . .

The scene could be duplicated in any theater where we have fought. Our combat records of World War II are filled with reports of the destruction of friendly troops and equipment in unmarked minefields. Everyone knows that the "book" requires some sort of marking around mines, and everyone receives training in how this should be done. Yet again and again, American troops have failed to mark minefields. Some lacked standard equipment or had forgotten how to use it. Some thought there were too few mines to bother about, or that someone else would do the job. Others believed marking would make it easier for the enemy to neutralize the minefield or remove the mines. Still others felt that if a minefield were marked, its very purpose—surprise annihilation of the enemy—would be defeated. Mark a minefield, they said, and there is no point in laying mines.

A standard minefield marking fence.

But what *is* the real purpose of a minefield? According to TC-34, its primary mission is to present the enemy with an obstacle which will restrict his movement. The capability for producing casualties, though essential to the primary mission of the minefield, may remain only a capability. A minefield may kill or wound—or threaten to do either without

valuable weapons

the explosion of a single mine. If the marking fence communicates that threat to the enemy and stops him, slows his advance or causes him to be diverted, the minefield has accomplished its mission.

The minefield is designed as an obstacle, not an ambush. Marking makes it no less formidable. Our other obstacles—barbed wire, dragon's teeth, walls and abatis—are plainly visible to the enemy as he comes upon them. But all of them serve to delay, disorganize or canalize his attack, as minefields do.

During the elastic-band campaigns across North Africa in World War II, one clearly marked minefield changed hands repeatedly. Warned by its signs and fences, both British and Germans went out of their way to avoid it, never once entering the mined area. Then one day, a group of natives blundered through the fences, strolled the entire length of the field and emerged unhurt. There were only two mines in that field! About the same time, minefields laid by the Russians were proving their threat

value against the German invader. Skilled as the Nazis were in the use of mines as a psychological weapon to produce "mine fever," they became victims of it themselves at the hands of the Russians. After heavy losses in Russian minefields, German tank crews were absolutely afraid to advance in areas where there were any indications of mines.

The minefield produces casualties, its secondary mission, not because the enemy fails to notice it, but when he decides to pass through it—whether he is aware of the mines or not. Two courses are open to him. He may try to clear out the mines. Or, judging that his casualties will be no greater, he may try to move right through. In either case, he suffers casualties from mines. The individual mines should be so well emplaced and camouflaged that the enemy will be unable to avoid or locate them. Except in *protective** minefields, mines may be booby-trapped with extra trip wires, firing devices or other mines to defy the

in our hands

cleverest of the enemy's "lifters." Americans in Korea saw an entire communist patrol eliminated when one member tried to remove a booby-trapped mine. The field was in an area through which the communists wanted to move their tanks, and even though they knew its location, they made several unsuccessful attempts to remove the mines.

The enemy can count on losses from mines, whether he tries to clear the field or rush through it. But, in addition, we should subject him to intense covering fires. The combination of mines and fire

Two strands of wire—one about knee-high and one about ankle-high.

will prove far more deadly than mines alone; sometimes the fire can be a surprise even though the minefield is not. In any case, what effect we might lose by marking is small compared to the damage unmarked minefields can do to our own troops.

What happens when we try to trick the enemy? To get really cagey—we might strew paths marked "safe" with small, almost invisible mines designed

and the enemy's.

to blow off the feet of those who follow the signs. Result? The first cripples will be from our own units. The unmarked

*Protective minefields are used for close-in protection and may be laid on authority of battalion and higher commanders. TC-20, Par. 3.

field is equally murderous. "Our minefields are too often marked with the wrecks of our own vehicles and the bodies of our own men," observed one officer bitterly during the North African campaign. Such incidents, familiar to every combat veteran, kill morale as well as men. Soldiers fall prey to "mine fever"—they are afraid to move about in their own areas. Combat efficiency is wrecked, tactical movement slowed and restricted. Finally, officers and men alike lose faith in mines as a tool of war. "Hell, I'm not interested in where mines are," exclaimed one American commander. "I want to know where they aren't—that's where we need to be!"

Yet mines are valuable weapons—in our hands and in the enemy's. Mines enabled outnumbered American units to turn back mass attacks in Korea. Conversely, one third of American tank losses there can be chalked up to mines. Our enemies show no signs of abandoning a weapon which serves them so well. Are we to tell the American soldier that we do not dare use mines, that he will have to learn about them from those which the enemy uses to destroy him?

We cannot afford to give up mine warfare. Rather, we must train our troops in the importance of careful marking and prompt reporting of minefields. Occasional special periods will not suffice. Training must be recurrent, amplified by constant reminders like those employed in safety campaigns. The picture of a properly marked minefield must be stamped upon each soldier's memory.

Properly marked, of course, means marked with standard equipment whenever possible. Hitherto, minefield and lane markers (see photo, page 18) have been available only as part of the marking

Laying the mines requires exact and thorough training.

Nazi tank disabled by land mines and shellfire.

set authorized in the divisional combat engineer battalion. Latest army plans, however, are to issue them in bulk at Class IV supply points adjacent to the ammunition points which issue mines.

But absence of standard equipment should not deter us. Hundreds of duplicate markers were manufactured in Korea just by cutting up tin cans, painting them and stringing them at 15 yard intervals on the barbed wire surrounding a field. The service company of an Infantry regiment or supporting combat engineers can turn these out with ease. Even cruder field expedients—any type of wire hung with rags—work well enough, provided that neighboring units are notified of their meaning. All that counts is that two strands of wire be stretched (one about knee-high and one ankle-high) firmly enough to remain in place, that they be marked in a "manner known to all personnel," and that *all* minefields be so marked—and reported! No lack of equipment or training should interfere with measures as simple as these.

Laying the mines themselves is not such a crude affair. It requires exact

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WHY mark minefields? Every Infantryman has heard the question—too few seem to know the answer. Here are two experts to spell out the how—and why—of minefield marking.

MAJOR FRANCIS M. WATSON served with the 389th Infantry in the Pacific in WW II, with G4 at GHQ, Tokyo and as a company commander and S4 in Korea. A graduate of the Advanced Class, TIS, he is now chairman of the Mine Warfare Subcommittee of the Weapons Department, TIS.

Another Pacific veteran of WW II, **1ST LT BENNIE R. BRIDGES** received his commission and a BS degree at the University of New Hampshire. He is a graduate of the Advanced Company Officers Course, TIS, and is an instructor in mine warfare.

Salvage ammo cans cut to the familiar triangular shape and painted provide excellent expedient markers.

and thorough training. Did your minefield turn out a fiasco? Don't blame the marking; it didn't fail because the enemy knew its position. Poor installation and camouflage of the individual mines are the real causes. An amazing number of mines get buried with their safety pins still in place! Others are buried so deep that a soldier's foot or the wheel or tread of a vehicle can "bridge" them, resting on the shoulders of the hole without pressing upon the mine itself. And, of course, booby-trapping mines requires knowledge of auxiliary fuzes. If these exacting procedures are neglected, the ill effects outshadow any incurred by marking the field.

Markers may be omitted or removed only when our troops withdraw. If only friendly patrols or security elements are likely to be in the area, marking may be partially obliterated.

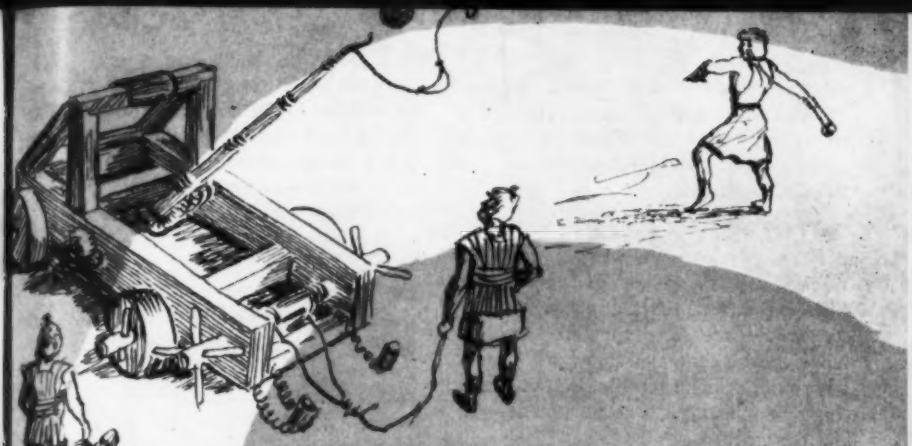
Nearly all armies employ some expedient system for marking minefields. The Germans used slashes on trees, half-buried cans and piles of rocks. The Japanese sometimes left their signs in place, figuring we couldn't read them anyhow. The essential point is that whatever marks we choose should be known to all personnel and consistently employed.

The wisest course is to accept the mine's limitations with its advantages. The mine was never meant to fight an independent war of trickery and surprise. It works with covering fire to block the enemy's advance, a job the heaviest fire cannot always perform alone. Marking minefields, as we have seen, does not reduce the effectiveness of this partnership. Why try turning the mine into something it was never intended to be? Who are we fooling? Our minefields will be marked—with signs and fences, or with the wrecks of our own vehicles, the bodies of our men.

SHORTCUT TO ETERNITY

In August 1775, the London Chronicle published a letter from the Bradford brothers, printers of Philadelphia. Part of it read as follows: "This province has raised: 1,000 riflemen, the worst of whom will put a ball into a man's head at a distance of 150 to 200 yards; therefore advise your officers who shall hereafter come out to America to settle their affairs in England before their departure."

Cpl Frederic G. Sanborn



FROM BALL TO BOATTAIL

DAVID had to cut a giant down to size—so he took along a sling. David reasoned that his pebble was as lethal as his opponent's spear, and the giant's size simply made him a better target. Goliath found David's ideas both striking and forceful.

The sling was David's version of the M1. A rifle gives the modern soldier precisely the same advantages. But we have learned that steel and high explosives are more effective than leather and a supple wrist. And our missile, tiny as it looks, is far deadlier than David's "smooth pebbles from a brook." Centuries of experiment and invention produced the differences of thousands of yards in range and thousands of foot-seconds in velocity. This is the story of those centuries.

David's sling and Jonathan's bow remained the models for missile weapons almost to modern times. The ballista and catapult of the Romans were large mechanical bows; the "onager" was simply a big wooden sling. Even their ammunition—stones and metal darts—were the same. But it would be hard to recognize the

Capt A. R. Underwood

sling in the medieval trebuchet (an onager so vast that its beam consisted of a tree trunk) or David's pebbles in huge stones which could batter down the stoutest castle gate.

Roger Bacon's Formula

Great developments were on the way. As early as 1250, we hear of Moors firing small balls from tubes attached to their lances. At the same time in England, Roger Bacon concealed in a Latin cypher a formula which would make explosive charges in history. The gunpowder era had dawned.

Although weapons changed greatly, the rocks and arrows they fired remained the same. Bullets for small arms were merely round metallic pebbles; early cannons fired darts and balls chipped out of stone.

Inaccurate and feeble though such missiles seem to us, they aroused as much panic and indignation as the atom bomb itself. It was not enough that your castle walls were no longer safe against bombardment. When you sallied forth to disperse the rascally cannoneers, you were likely to find even armor poor defense. Few gunners were as charitable as the French, who, according to one chronicler, used "that terrible weapon . . . with good effect against some castles in 1338, but . . . would blush to employ it against their fellow creatures." The Seigneur de Montluc, who rose from man-at-arms to Marshal of France, wrote concerning "this unlucky instrument" that "I myself still bear about me the marks that it has left, which even now cause me to suffer much weakness; and have seen brave and valiant men killed with it in such sad numbers, and it generally happened that they were struck down to the ground by those abominable bullets, which had been discharged by cowardly and base knaves, who would never have dared to have met true soldiers face to face and hand to hand."

Those Abominable Bullets

The wheel lock succeeded the matchlock, and the flintlock superseded both, but "those abominable bullets" altered little. Even the eighteenth century bullet preserved the same spherical shape as its remotest ancestors. It was between .60 and .80 inches in diameter and cast from soft lead in metal molds. The soldier carried it with its powder charge in a paper or linen cartridge. To load his musket, he bit open the cartridge, poured the powder down the barrel—saving a pinch for priming—and with his ramrod thrust the bullet (wadded in its cloth or paper envelope) down on top.

The soldiers of Frederick the Great, drilled to automaton precision, could load their flintlocks in this manner and fire up to five volleys per minute. The percussion cap caused fewer misfires, but loading came to involve some two dozen steps, and rate of fire was cut in half. Whole companies of recruits in the War Between the States were wiped out because, in the heat of battle, they forgot how to load their weapons.

So loose was the ball in its smoothbore barrel that only the paper wad or a wisp of grass kept it from rolling out. On discharge, gases easily escaped past the ball. Hence, muzzle velocities were low—less than 100 feet per second—and the ball's

●

OUR own weapons expert, **CAPT ARTHUR R. UNDERWOOD**, specializes in the new and the old. In April he told us of the army's latest cartridge, and now, in July, he takes us back to Biblical times. Another historical article, "Powders and Primers," is scheduled for early publication.

A 1949 USMA graduate, Capt Underwood served as platoon leader, exec and company CO in Korea. He attended the Basic Officers Course, TIS, and is now an instructor in the Weapons Department, TIS. He is a member of The American Society of Military Insignia Collectors—a fitting hobby for an army historian.

direction most uncertain. It rattled up the barrel, flew off obliquely from its last contact and plowed into the ground about 125 yards away. Battles were fought at ranges of 30 to 75 yards, companies and regiments firing in volleys. Individual marksmanship was impossible. In fact, it was sometimes considered undesirable: officers of the Irish armies, ordered to teach their men to shoot, protested that, within a week, not a landlord would remain alive in Ireland. No wonder that General Burgoyne, in Shaw's *The Devil's Disciple,* advises Dick Dudgeon to be hanged "in a perfectly workmanlike and agreeable way" rather than risk a British firing squad: "Have you any idea of the average marksmanship of the army of His Majesty King George the Third?"

Kentucky Riflemen Lead the Way

"Gentlemanly Johnny" Burgoyne spoke with authority. The Kentucky riflemen of General Daniel Morgan had taught him what marksmanship could be. Rifling had been known in Europe for centuries—even quarrels* were sometimes spun for steadier flight—but Europeans had to travel all the way to America to learn the advantages of the rifle as a military weapon. Muzzle-loading with a ball large enough to grip the rifle grooves can be hard work—especially if the barrel is caked with gunpowder from previous firing. But for the hunter, accuracy counts more than speed. The rifle became a hunter's weapon, and in the Revolution, hunters necessarily became soldiers. Only the frontiersman carried a rifle, however: Revolutionary soldiers from the seaboard were armed with muskets, like the British.

The Kentucky rifleman used a ball smaller than his rifle bore, wrapped in a greased leather patch. The ball loaded easily and the patch gave it the necessary twist and even helped to sweep out fouling left from the previous shot. With this weapon, the frontiersman could shoot three to four times farther than his English adversary, and far more accurately. In 1800, still smarting from its American adventure, the British Army adopted the suggestion of Colonel Coote Manningham and formed a Rifle Brigade. But it refused to copy the Kentuckian's small, patched ball. Baker Rifles, the first issued to the Brigade, fired bullets actually larger than the bore. To thrust them down the barrel, the rifleman needed a ramrod and a wooden mallet.

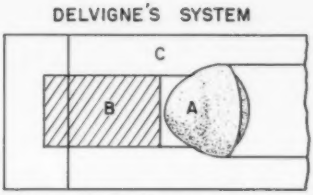


Figure 1

The Modern Bullet Takes Shape

With the advent of the military rifle, the modern history of the bullet begins. The problems posed by rifling transformed a clumsy leaden sphere into the sleek, glittering cylinder we know today. A weapon which must be loaded with a mallet is obviously unsatisfactory. The problem was to find a ball small enough for easy loading—yet large enough to grip the lands and grooves. Countless bullets were invented, modified and discarded in search of a solution. All fall under two main types: the small bullet which was enlarged after loading and the shaped bullet which was designed beforehand to fit the grooves.

The Delvigne rifle of 1826 employed a ball of the first type (see Figure 1). The bullet was small enough to slip down the bore easily and came to rest

*Square-headed bolts or arrows used in crossbows.

against the sharpened shoulders of the breech. With his ramrod, the soldier pounded the soft lead against the breech, crushing it into the grooves. But the bullet got rather battered in the process, and its odd shape resulted in very erratic flight. Supporting the bullet in a wooden *sabot* or shoe helped prevent such distortions. The substitution of a projecting pillar for the shoulders of the breech saved the powder charge from being crushed. But unhappily these improvements created new problems of their own!

Less practical but more promising was a bullet produced by Captain Norton in 1823. One of the first bullets to depart from the sphere, it was one and three-fourths times as long as it was wide. At its base, a thimble-shaped cavity contained a charge of powder. The explosion pressed the thin walls of the bullet outward against the lands of the rifling. But Norton's expanding bullet was easily deformed by the force of the discharge. It was rejected by a conservative Ordnance board on the grounds that "the spherical ball was the only shape of projectile adapted for military purposes"! In spite of his failure, the shape of Norton's bullet, the location of the charge and the principle of expanding the bullet from within were all prophetic of better things to come.

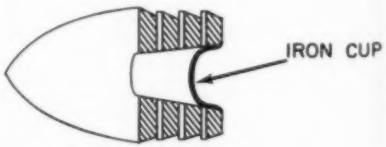
A decade later, a crusty English gunsmith, William Greener, brought forward the first successful expansive bullet. Greener, who considered rifles a passing fad, intended his invention for the musket. His bullet was oval and was fitted with a small plug which was driven by the explosion into the body of the bullet, forcing it into the rifling. The Greener bullet easily bested its rivals on the testing field, but again the forces of reaction triumphed: the board reported that "it being a compound, rendered it objectionable."

Since 1820, advanced thinkers had been experimenting with long bullets. These cut the air far better than a sphere. Delvigne's bullet, with its sabot, was a step in this direction, and it was Delvigne who first designed a bullet of almost modern form. It had a flat base, cylindrical body and conoidal head. But this bullet, like Delvigne's earlier model, was mashed into the rifling with a ramrod.

The Minié

In 1849 appeared the most famous bullet of all time—the Minié (see Figure 2). Captain Minié, its inventor, exploited all the discoveries of his predecessors. He borrowed the cylindro-conoidal shape from Delvigne, the cavity at the base from Norton, the plug (in the Minié bullet, a small iron cup) from Greener. As Delvigne had pointed out in 1841, the force of the discharge in the cavity alone sufficed to expand the bullet. But Minié could not depend on uniform gunpowder, so he added a cup. With improvement in the propellant, the cup disappeared.

The Minié and its paper wrapper filled the rifling grooves, provided a perfect gas seal and swept out most of the fouling in the barrel. Here was the bullet the world had waited for, and only Minié's rivals grumbled. "There is no evidence," wrote the disgruntled Greener, "that either Delvigne or Minié had any profound knowledge of the science of gunnery, and their knowledge of the principles of expansive rifle bullets was



THE MINIÉ BULLET

Figure 2

so meagre as to justify the assumption that their only connection with its production was that of copying from the Times, or from my own works, published in 1842 and 1846." But the British government adopted Minié's bullet, and Greener was forced to console himself with an award of 1000 pounds.

Meanwhile, the advocates of the shaped bullet were not idle. In 1835, the Baker rifle was replaced by the Brunswick. This rifle had only two grooves and its bullet was encircled by a protruding belt which fitted them (see Figure 3). This gave a tight grip, permitting very sharp spirals in the rifling—one turn in thirty inches, compared to the

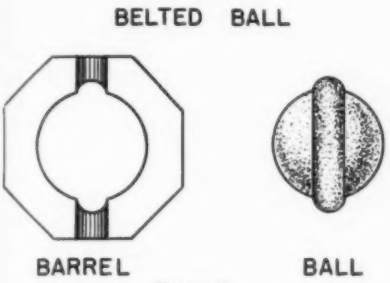
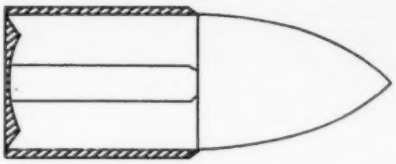


Figure 3

Baker's one turn in four and one half feet. But fouling quickly filled the grooves—making loading difficult—and the poor balance of the ball caused it to tumble in flight.

Enter General Jacob

Now enters one of the most colorful figures in the bullet's history. A dashing calvary officer who cowed the marauding tribes of the upper Sind more by his personality than force of arms, General John Jacob was also a remarkable mathematician and practical scientist. Detecting the poor balance of the single-belted Brunswick ball, he designed a bullet with two crossed belts. This was refused in


THE JACOBS BULLET
Figure 4

turn by the British and Indian governments, with the remark that "the Brunswick, being considered good enough for the British Army, was good enough for service in the Honorable East India Company." Undeterred, Jacob continued experimenting for nearly 40 years at his own expense. His final product was cylindro-conoidal and sharply pointed like our own bullets, but it retained the four ridges of his original design. The Jacob bullet (see Figure 4) proved accurate at unheard of ranges—up to 2000 yards. When tipped with explosive, it could set off an ammunition dump at 1800 yards. The government continued to ignore the general's work until 1858, when it authorized him to raise two regiments of "Jacob's Rifles," to be armed with his improved rifle and explosive bullet. But recognition came too late. Worn out by overwork and the heat of India, Jacob died of brain fever within the year.

In 1854, dismayed by the fact that no two rifles submitted for testing shot quite alike, the Master-General of Ordnance sought the aid of Joseph Whitworth. Whitworth, a brilliant engineer and mechanic, was famous for the exact measurement and workmanship of his machine tools, and he applied the same high standards of accuracy to rifles. By elaborate experiments, he proved that the spin given the new, elongated bullets was much too slow, so that they capsized in flight; that they were far too light; and that the manufacture of both rifle and

bullet was so crude than an exact fit was impossible. He developed a six-sided bullet which closely matched an ungrooved hexagonal bore (see Figure 5). The bore twisted upon itself to spin the bullet one complete turn in twenty inches. The Whitworth rifle easily outshot the Enfield, then the standard British mili-

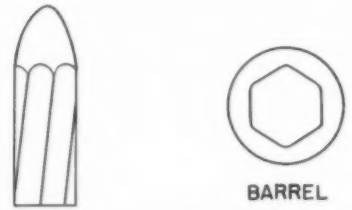


Figure 5

tary rifle. The Ordnance board preferred the Enfield's larger bore, however, and Whitworth's rifle met the same fate as General Jacob's.

Houillier's Cartridge

But the muzzle-loaded bullet was already obsolete. In 1846, Houillier, a Paris gunsmith, patented the first workable metal cartridge. The springy metal, expanding with the explosion of the powder charge, sealed off the breach, blocking the rearward escape of gas and flame. The long-desired breech loader thus became a practical reality. Now it was easy to load bullets larger than the bore: gunpowder did the work of mallet and ramrod. The soft lead and deep rifling necessary for muzzle-loading expansive bullets gave way to hard lead and shallow grooves.

With hard lead bullets and a metal cartridge to prevent backfires, experimenters began to employ greater pressures and heavier charges. The race for high velocities was on.

Switzerland soon took the lead: the head of the Swiss army laboratory at Thun, Major Rubin, realized that by decreasing bore diameter, he could boost velocity without increasing the powder charge. Even hard lead began to melt and strip under these new pressures. In 1880, Rubin solved his problem by coating the lead bullet with a copper case. Copper soon gave way to cupro-nickel, but cupro-nickel erodes the barrel, and it was replaced by gilding metal—the jacket we use today.

The Big Switch

In the decade after 1885, almost all the nations switched from a lead bullet and black powder to smokeless powder and small caliber bullets with metal jackets. At the turn of the century, the pointed and "boat" tailed bullet made its debut. Both the tapering boattail and the pointed nose are designed to minimize air resistance. Thus, when the round nose of the American M 1903 bullet was

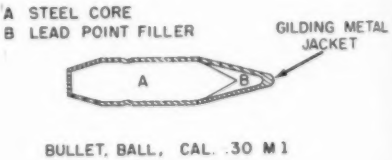


Figure 6

sharpened in 1906, we were able to cut the weight thirty per cent with no loss in velocity. The boattail reduces "stern drag" at the base of the bullet. A boattail bullet floats much farther than a flat-based, but the boattail has little effect until velocity drops below 1100 feet per second at a distance of 600 to 800 yards.

American soldiers in World War I envied the range of the French ammunition, the boattailed Balle D. Army Ord-

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We must, if we are to realize the hopes we may now have for lasting peace, enforce our will for peace with strength.

—Gen George C. Marshall

nance experiments showed that a bullet tapered by a nine degree ogive gives excellent accuracy, while retaining a flat base large enough to take the full push of the powder gases. In 1926, the US Army adopted the boattail with the M1 Ball (see Figure 6).

Great range is necessary for trench warfare, but in normal combat, a .30 caliber weapon rarely has to fire beyond 500 yards. And up to 600 yards, boattailing makes little difference. A boattail is harder to manufacture than a flat-based bullet, and since it is sensitive to unequal gas pressures, it can be very inaccurate if badly made. For these reasons, the army reversed itself in 1939 and went back to a flat-based bullet—the M2 Ball. The M2 is a lighter bullet with a smaller charge. It causes less recoil than the M1 and is extremely accurate up to 600 yards, with a maximum range of 3300 yards.

What Now?

We now have a family of .30 caliber bullets designed for special purposes. First of all, there is the M1 Ball—a pointed, boattail, 172 grain bullet which gives good accuracy at long ranges. It has a maximum range of 5500 yards. This projectile is not currently standard issue.[1] Secondly, we have the standard M2 Ball, a lighter, flat-based projectile with flatter trajectory but shorter range. Both the M1 and M2 have tracer counterparts. In addition, we have an incendiary round, which is boattailed but otherwise resembles the M2, and the .30 caliber armor piercing bullet. This copies the M2 except for its tungsten chrome steel core which splits through the jacket and filler on impact.

There is no family resemblance between the pebble David used to slay Goliath and today's high-powered bullet. As new weapons are developed, we may expect more changes; for as long as small arms are used in battle, men will seek more lethal bullets.

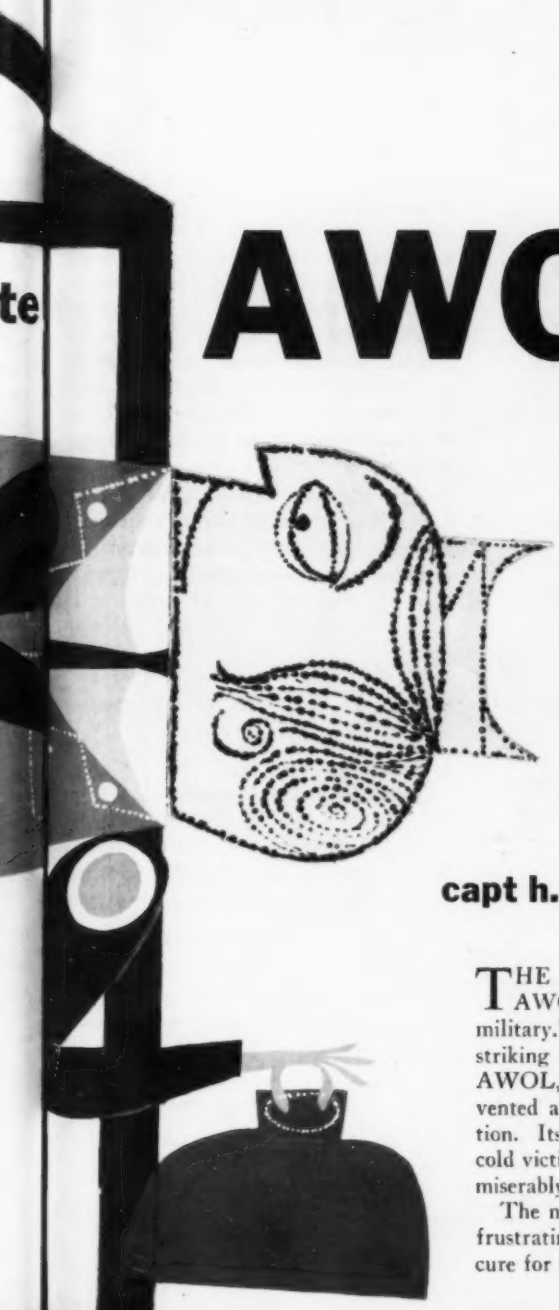
BUT...

you'll have to notify us whenever you change your desert island. Send your address change to: Chief, Infantry School Quarterly Circulation Section, Book Department, The Infantry School, Ft. Benning, Ga.

[1]The boattail is used with .50 caliber and some T-65 rounds. The T-65 is now officially known as the M59 and has been approved for use with the T-48 and T-48EI rifles. See "The Queen and the Cartridge." *The Infantry School Quarterly*, April 1955.

can we eliminate

AWOL?



over the hill

capt h. s. napier

THE phrasemakers have dubbed AWOL* the "common cold of the military." When we compare the two, a striking similarity becomes apparent. AWOL, like the cold, can often be prevented and is always a source of irritation. Its cure, like the nostrums given cold victims, may work for some and fail miserably for others.

The medical profession, despite many frustrating failures, continues to seek a cure for the common cold. Such tenacity

*In this article we will consider AWOL as any illegal absence of more than three days.

Depression is an AWOL warning sign.

is admirable. The army, too, is forever seeking methods of eliminating or preventing AWOL. Unlike the elusive and minute cold germ, the AWOL is a big-as-life human, with built in problems. To solve the AWOL riddle, we must examine an AWOL and figuratively dissect him to see what makes him function.

The AWOL

Psychiatrists tell us that the extremely maladjusted AWOL *may* be a chronic malcontent.** This form of mental irregularity often makes him self-centered and inconsistent in his conduct. His judgment is, at best, immature. In addition, he tends to rationalize and usually lacks an objective or goal. *All* AWOLs do not fall into this category nor do *all* suffer from the condition described. Some AWOLs are, of course, more maladjusted than others. It is important to remember, however, that every AWOL will, at least temporarily, exhibit some of these symptoms.

Research studies help us draw a composite picture of the average AWOL. We find that he is a young man between 20 and 25 years of age who has been in the army less than two years. He is not a gregarious individual. He prefers his own company. Chances are, he did not attempt to discuss the problem (real or imagined) that prompted him to go AWOL. If, by chance, he talked his problem over with someone, he rejected any solution that was proposed. If he is a representative AWOL—he did nothing to give his departure any semblance of legality.

The reasons given by AWOLs for going "over the hill" afford a means of understanding their actions. An analysis of these reasons indicates that the typical man was depressed, lacked confidence in his leaders and was the victim of his own poor judgment.

These reasons warrant further consideration. To correct the situation, we must ferret out the *why* of each.

Depression

This may be the result of real or imagined trouble or illness at home, nostalgia, or job dissatisfaction. It may be rooted in the man's inability to adjust to army life or it may be a result of poor

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CAPTAIN NAPIER'S study of AWOL has been "something of a hobby" for about five years. Certainly the author shows a unique understanding of both the AWOL and his problems.

Captain Napier (USMA 1945) has been a company commander, served in Korea with the 25th Division, and is currently an instructor with the Weapons Department, TIS.

**Chronic Malcontent. According to medical definition, the chronic malcontent may be a constitutional psychopathic personality. This is an individual who has no sense of obligation to society and is totally self-centered and egotistical to the degree of not considering the consequences of his actions upon others.

recreational facilities. Regardless of whether these causes seem valid, they are sufficient to trigger some men in a state of gloom.

Lack of Confidence in Leaders

The AWOL is not given to self analysis. He apparently is unable to see that he is his own worst enemy. Rarely, if ever, does he blame himself for his difficulties. Instead he seeks a scrapegoat—usually someone in authority. He rationalizes that his commander is charged with "taking care of his men." Unless this symbol of authority "cares for him" in a manner the AWOL thinks correct, he is perturbed. The AWOL isn't a perceptive type. He does not want to recognize that his well-adjusted barracks mates consider themselves comparatively well off. He concludes from his off-beat reasoning that many of his ills—real or fancied—stem directly from the symbol of authority, his commander.

Immature Judgment

We have already indicated that the AWOL has poor judgment. This is rooted in his inability to recognize the real reasons for his decisions or actions. For example, if he quit high school* he convinced himself that he did it in order to lighten the burden at home or to help the family. Actually, the reason was not altruistic. He quit because he saw no valid reason for continuing.

Our AWOL decides to join the army. Why? He tells himself that it's glamorous to wear a uniform and that he needs a change. Perhaps he aspires to become an NCO or an officer. Are these the real motivating factors? No. In reality, he is a chronic drifter who either hasn't been able to hold one job for long, or (if he has helped support a family) simply has no sense of obligation. Does he want to better his station in life? No. It's more likely that he wants to escape.

Once in the army, he discovers that he is a small boat in a big stream. This adds to his inherent inferiority complex and causes him to resent authority (he always did). He is convinced that minor corrections are directed toward him, personally. (The typical AWOL would instinctively feel that he was discriminated against if he failed to receive a pass.) He has a tendency to blame everything on a favorite scrapegoat—(usually) his commander.

Preventive Measures

All of the aforementioned indicators help to bring the average AWOL into sharper focus. Unfortunately, only a psychiatrist can help the extremely maladjusted man (AWOL) to unravel the twisted threads of his personality. What's more, he can only help if the subject is sufficiently motivated to want to be

The judgment of the AWOL is, at best, immature.

*Studies indicate that the AWOL has displayed a greater tendency toward truancy than a comparable cross-section of the army.

helped. As we said earlier, the average AWOL does not fall into this group, though he may sometimes show similar symptoms. As commanders, we have both the time and the training needed to work with the more cooperative type. We cannot relax and wait for the situation to resolve itself. (See Figure 1.)

Armed with the above information, there are numerous positive preventive measures that you, as a commander, might take. What follows represents only a fraction of the means available to you to reduce or prevent AWOL.

Interviews. There is no substitute for personal contact. The man who is singled out of a group for an informal conversation with his commander is not likely to feel like a number. He becomes (and rightly so) a human being.

Each man has a distinct, individual personality.

Don't attempt an interview, however informal, without background material on the subject. Visit your local personnel section and check the form 20's of perhaps ten or more men that you wish to select for impromptu interviews. Make notes on any item that may be of interest. It's only human for a man to be flattered when his commander knows something about his home town, state or pre-service schooling or occupation.

Avoid letting your technique show. If these men feel your action is calculated—your effort is doomed. If the subject of your "interview" is a well adjusted soldier, you've lost nothing. If he is a potential AWOL, you may inflate his ego sufficiently to prevent his becoming an AWOL.

Discuss AWOL. Bring the AWOL facts of life before your men periodically, but don't harp endlessly on what happens to an AWOL. To the determined potential AWOL this is, at best, a weak deterrent. Try the personal approach. Show the men how the innocent are victimized by an AWOL. Do this by example. Take a typical duty roster to illustrate the manner in which an AWOL forces each man up one notch.

Here is a sample situation. Assume that Pvt Arnold is scheduled for KP on Monday and that Smith, slated for KP on Sunday, goes AWOL. The result: Arnold takes his place. On the surface this seems unfortunate but certainly not disastrous. For Arnold, however, it becomes a *real* and *personal* disaster. Why? Because his girl friend (from home) is visiting for the weekend.

Odds are that Arnold would have made an effort to be his brother's keeper if he realized what Smith's unexpected (and probably premeditated) departure would cost him. When borderline cases

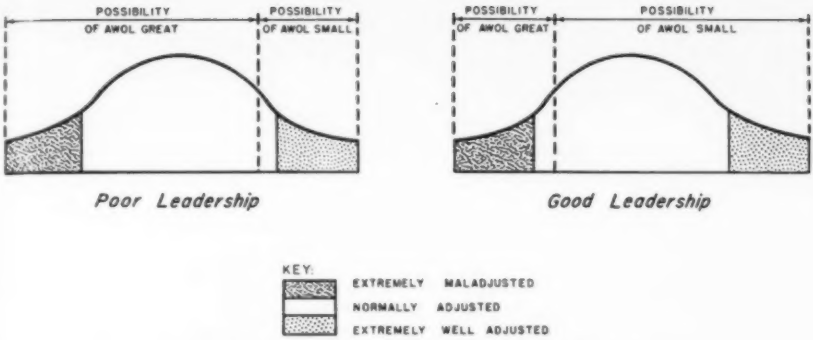

Figure 1 Effect of leadership on AWOL rate.

The curve in this case represents the distribution of men with respect to adjustment (average unit). As can be readily seen, AWOLs come from the ranks of the extremely maladjusted or normally adjusted men. Extremely well adjusted men rarely go AWOL.

understand that the innocent are often the real victims of AWOL, they tend to think twice. This second thought is often the one that prevents going over the hill. Most men possess some sense of moral responsibility, however dormant it may seem.

Don't hesitate to tell your men of the extensive means used by the army to apprehend AWOLs and don't forget to mention that civilian police get paid* for the job.

Finally, drill into the suspect AWOL the idea of *talking to someone first.* This may do more than any one other thing to solve his problem.

Liberal Leave Policy. After listening to AWOLs say they went over the hill because they were afraid they wouldn't get leave (naturally none had made an effort to ask), one company commander decided to beat them at their own game. He made it company policy for any man who felt he had to "take off," or who might be contemplating AWOL, to get a three day pass—no questions asked.

The man had only to tell the CO that he had to have a three day pass. The commander made no effort to pry. If the soldier wanted to talk, the old man would listen. If he asked for help or advice . . . he got it. The AWOL rate was reduced materially. Judging by the success of this system, we might conclude that when a potential AWOL is convinced he can depart legally, the glamour (a misnomer) and adventure (another misnomer) that he associates with AWOL vanish. He has no reason to buck city hall and has no "scapegoat" on which to place the blame for his problems(?).

Paydays. Many commanders dread payday with the same fervor that a shop keeper welcomes it. Payday is too often the green light for the potential AWOL.

Flush with money, he may decide to momentarily trade his habitual inferiority for a king size case of superiority. Lacking a true sense of responsibility . . . and plagued by bad judgment . . . he might, if left entirely to his own devices, go AWOL.

*AR 35-1570 provides for a reward (not to exceed $25.00) to be paid by the government to the individual apprehending and returning an AWOL to the military. This sum is then deducted from the AWOL's pay.

Some commanders make it a practice to talk to their men on paydays. They usually remind them to travel in pairs, to help each other if trouble develops and to call (the CO) when it does. This enables the CO to take immediate action. Any unit with reasonable esprit should find this helpful. There isn't anything new about the idea that men in the same unit must stick together and watch out for one another. In combat it's a matter of life and death.

Praise almost always takes the tarnish off a dull assignment.

Job Importance. Everyone, from the company fireman to the first sergeant, must feel that his job is important. The army, like General Motors, Ford or US Steel, has its share of interesting and dull, routine jobs. These jobs are equally necessary, but the man on the job may fail to recognize it.

Every commander should be prepared to explain the relationship between any given job performed by the men of his unit and the unit's mission, whenever asked or when necessary. Frequently, the individual attention given is enough to impress a man with the importance of his job. In other cases, a specific explanation is required. Never forget that even an habitual wastrel resents wasting HIS time.

When a man does a job well, praise him for it. And remember, praise almost always takes the tarnish off a commonplace assignment.

Non Commissioned Officers. The wise commander realizes that the AWOL problem is a difficult one to solve without the assistance of his NCOs. Take time to tell them about AWOL indicators. If necessary, have them check on men that seem depressed or withdrawn. Tell them to report such cases. Your NCOs are your AWOL watchdogs—they can serve you well.

Orient the Men. Very few men know precisely what to tell their families to do in event of a "real" emergency at home. The commander whose men are confused on the matter should share the AWOL's guilt.

One commander had copies made of a one page set of instructions entitled, "What Your Family Should Do in Case of Emergency at Home." Two copies were given to each man. One copy was pasted to the inside lid of his footlocker, the other was mailed home. To ensure compliance, each man had to initial a roster when the information was mailed home.

The information provided a simple checklist for the family in time of stress. In precise terms it told the family that, in case of illness, they should have the attending physician contact their local Red Cross chapter. (In the event of an emergency other than illness, they might contact the Red Cross themselves.) In logical order it explained that if the Red

Cross found the emergency real, it notified the man's company commander, who granted the desired emergency leave.

In no uncertain terms, it stated that this was not only the right way but the *only* way to obtain an emergency leave and bring a man home in time.

In one year only three men in his unit went AWOL.

The same commander made an ally of both the chaplain and the local Red Cross representative. Periodically, each would be asked to share the company commander's weekly command conference—to talk on some topic of concern to the men or to answer questions.

Some of these questions gave an insight into the problems that worry men. One man asked why it was necessary to repay a loan granted by the Red Cross to tide him over an emergency. The Red Cross representative explained that each post is granted a specified amount for loans. If one man fails to repay his loan, there isn't enough money to meet the needs of another. Another question was: "Why can't I get a Red Cross loan to buy an automobile?" The answer is obvious.

The chaplain, on the other hand, answered such questions as: "I am a member of a minority Protestant sect. Why doesn't the army provide a chaplain of my faith?" Other men wanted to know why such things as revival meetings weren't regularly scheduled. These questions and many more served to reveal the men's state of mind. The answers given (and it sometimes took days to find the correct answers) served to keep the men well informed and convinced them that the symbol of authority (their CO) was sincerely interested in both their physical and spiritual well being.

Praise the Outfit. Most good commanders tend to be perfectionists. While this is a commendable characteristic, it can create frustration on the part of the men in a unit. One successful commander makes it a point to let his men know what progress the unit has made periodically (even though he may feel that present results are still short of his desired standard). His men react favorably and *his* goal becomes "their" goal. Something they can share and, like sidewalk superintendents, watch progress. Unlike the sidewalk superintendents, however, each man becomes a builder.

Every man wants his unit to be the best in all respects. The commander who periodically says, "This outfit is getting better every day" recognizes the effort of the men responsible for the progress. Few outfits ever reach the standard of perfection the commander establishes. Should this ever occur, you can rest assured that complacency will usually result.

Payday is often the green light for the potential AWOL.

A wise man invests his money when he feels reasonably certain of a good return. A wise commander who pinpoints progress and praises his unit, is assured that this investment will prove lucrative.

Can We Eliminate AWOL? Perhaps not entirely. We *can* reduce it to insignificance, but not until we explore all the means (especially the relatively untried ones) of preventing it. This article represents a mere scratching on the surface of the problem. No solutions or effective preventive measures will be forthcoming unless we recognize AWOL symptoms. To the uninitiated, these are not always apparent—since all men in uniform seem similar. The experienced commander, however, sees the need for understanding and recognizing the forces (good and bad) that render each man a distinct individual personality. He has learned to judge men on the basis of performance and his knowledge of their behavior pattern. He has taught himself to recognize AWOL symptoms. By recognizing the problem, he has taken a step toward solving it.

As a final analogy, pretend that you have 20 golf balls. Each appears identical to the untutored eye. Your friend, Capt Aesop, carefully examines each one and proposes a wager. He bets you that one of the 20 won't travel in a straight line for a given distance on a smooth, even floor. You look at the balls again. They all look alike and you accept the wager.

A neutral friend proceeds to roll the balls on the prescribed surface. Each of the first 19 travels in a straight line. The 20th, however, travels a zig zag, left of center course (like an AWOL). You lose.

You might call it bad luck, conclude that the floor was uneven, or that something was wrong with the first 19 balls, but you don't. You realize that you didn't know how to judge a potentially erratic golf ball and that Capt Aesop did.

Men, like golf balls, often look alike to the inexperienced eye. The wise commander, however, is not misled by so superficial an observation. He knows his men and recognizes each as a separate and distinct personality. In so doing, he takes a giant step toward reducing AWOL.

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JULIUS CAESAR WAS A PIKER!

History tells us that Caesar was the first military publisher—but no mention is made of his paying his writers. If we know Julius . . . it was write, or else. It's not that way with ISQ contributers—they get paid well. Send your articles to: Editor, The Infantry School Quarterly, Pub & VA Section, The Infantry School, Fort Benning, Ga.

Find The Fighter

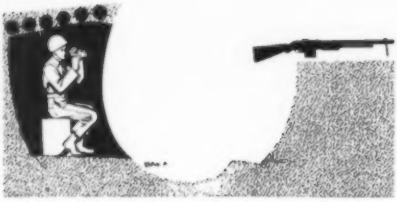
Lt Paul B. Malone III

HOW to find our fighters? This is a question that has been posed by Infantry commanders for years. To date no positive answer has been found—except, of course, in the crucible of combat.* Surely, any scientist who could find the answer would win his place in the annals of military history. Unfortunately, no scientific formula exists. Even more unfortunately, we are not using all the ways we now have to find our fighters.

As a point of departure in seeking an answer, let's start with the Infantryman's early training. We know that his basic and advanced individual training teach him combat fundamentals. Without basic training, organized Infantry units do not fight—much less exist.

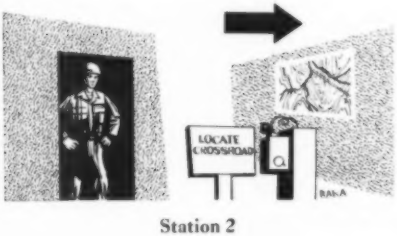
Throughout this training period, our soldiers receive many tests—on the range (which affords a degree of realism), on the drill field and in the classroom. This is a necessary adjunct to training, and certainly indicates a man's ability to retain what has been taught. But the new soldier's final examination seems to fall short of our desired goal. Why? Because it provides no true answer to our question. Too often, tests are given in quiet classrooms where the men being tested move from test station to test station in groups. Each man answers cer-

*See "Profile of a Fighter" (*The Infantry School Quarterly*, October 1954) for some interesting data on the subject.



Stations 1 and 3 are identical except for the weapon used. At Station 1 there is an AR (shown above) and at Station 3 there is an LMG.

NOTE: With ground sloping toward impact area, safety stand would prevent fire from dropping into Sector "B." It would be designed so that the tallest man could not depress the muzzle far enough to be a hazard.



Station 2

NOTE: The object here is to test the student's practical knowledge of map reading.

Station 6

NOTE: This station tests the student's knowledge of first aid, since man lying on the ground has a simulated belly wound.

tain questions and eventually accumulates a total score which serves to *indicate* his *potential* as a combat Infantryman. I'll agree that some subjects do require a garrison (or a genuinely academic) atmosphere for testing purposes, but aren't we overdoing it?

We cannot make the field of combat our testing ground. But we can simulate combat and test our men more realistically. I believe we should separate the individuals being tested from the group; put them on their own and see how they react as individuals. Once alone, let's confront each of them with the noise and confusion of combat. In this atmosphere, present them with varying situations which require *analysis* and *immediate* action. Of course, each of these situations must come as a complete surprise. This method, if properly supervised, would provide a more accurate means of finding our fighters than the one presently used.

Many of you have undoubtedly entertained a similar idea—or may have actually executed it. Speaking in general terms, I believe you will agree that this type of test has not reached the degree of use it deserves. This may be due, in part, to the numerous problems involved in organizing and designing such an examination. I believe, however, that I have an answer which overcomes these problems and can result in a low cost, safe test which will require only a minimum operating crew, a relatively small area, and few facilities.

PROPOSED EXAMINATION

Examine the sketch on pages 42 and 43. This is the proposed examination area. Note that the course is located on terrain which slopes toward the impact area. This is done for purposes of safety (since live fire is used). The trench shown is approximately seven feet deep and six feet across. The details related to the various stations located within the

trench are described in the chart on pages 44 to 47. Some of the more intricate stations are illustrated.

OPERATION

Here's how I visualize the actual operation of the examination. The soldiers to be tested receive first a brief orientation in the assembly area. They are not told what to anticipate—only that this is another test. To indicate, even by implication, that this examination has been designed to determine combat potential would destroy its value.

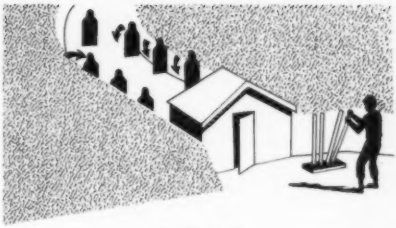
While in this area, each soldier is checked to make certain that he has his rifle, full field equipment and protective mask. A number (corresponding to that opposite his name on a roster) is chalked on each man's helmet. This practice permits ease of indentification and grading. At a given signal from the control officer, the first man enters the test trench and, at specified intervals, is followed by the others. These time intervals must be determined by experience, and are necessary in order to prevent grouping at any station . . . at any time.

As indicated by the detailed description of the activity at each station (see chart, pages 44 to 47), the individual is continuously confronted by new situations. If the test is properly monitored, each station should require the student to make a decision or to take some action directly related to determining his combat potential.

CONTROL

A grader at each of these stations (located in a protective recess on the side of the trench opposite the action) uses a checklist* to record the man's actions. The graders are equipped with field telephones. This system allows each grader to make direct communications with the NCO in charge of his sector. In this

*This checklist may be similar to, or an expansion of, the items found under "student" on the chart, pages 44 to 47.

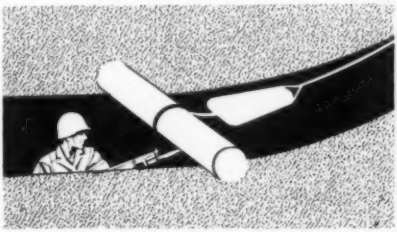


Station 12

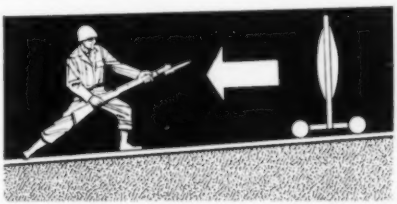
NOTE: Possible safety precautions in case student's weapon is jammed and he has rounds in weapon upon reaching turn. Wall with spring door which is unlocked by grader.

Station 13 (below)

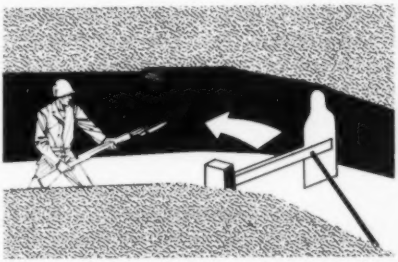
NOTE: The three dummies shown below may be used at Station 13.



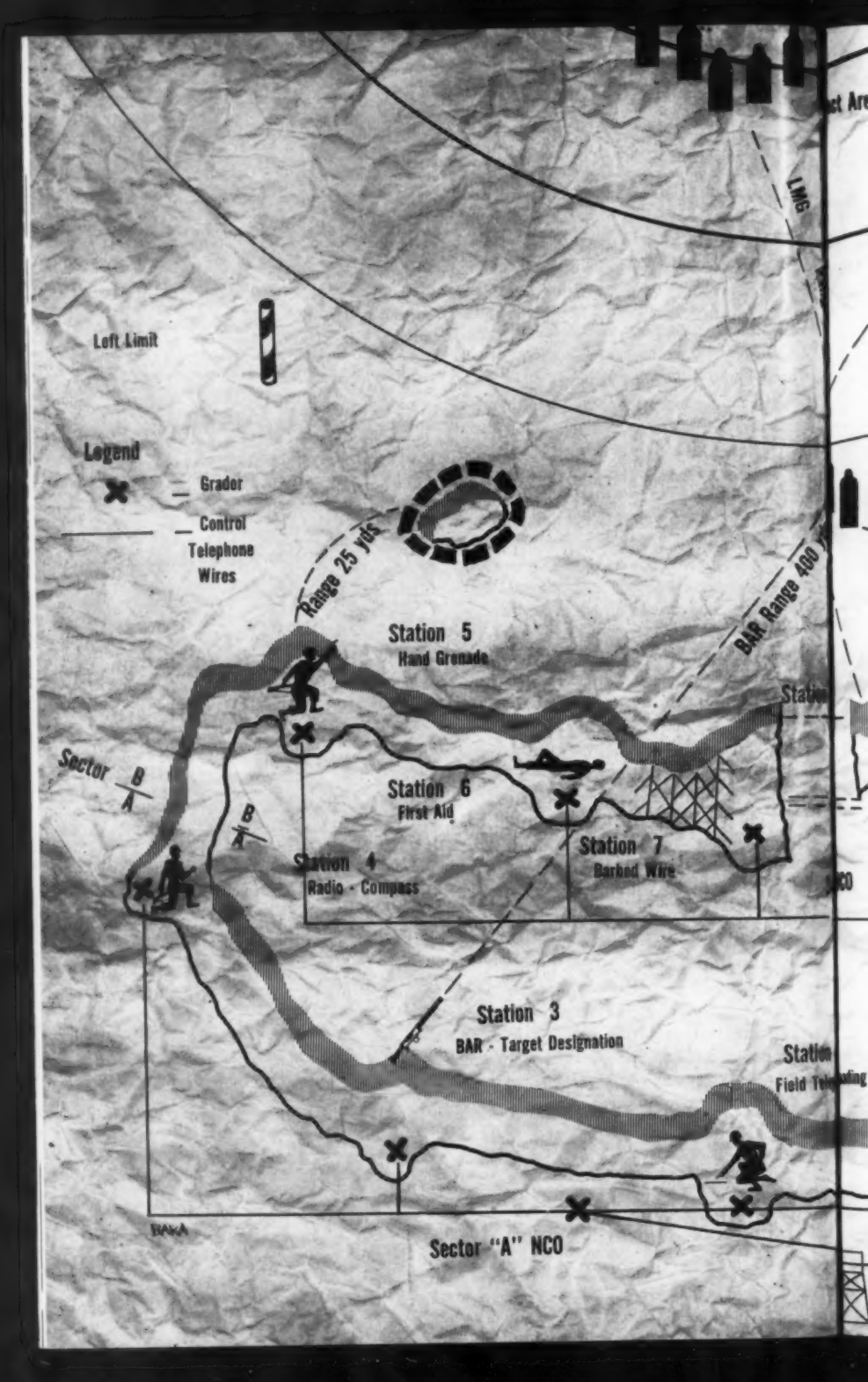
100 lb. dummy released to swing into path of student upon approach.

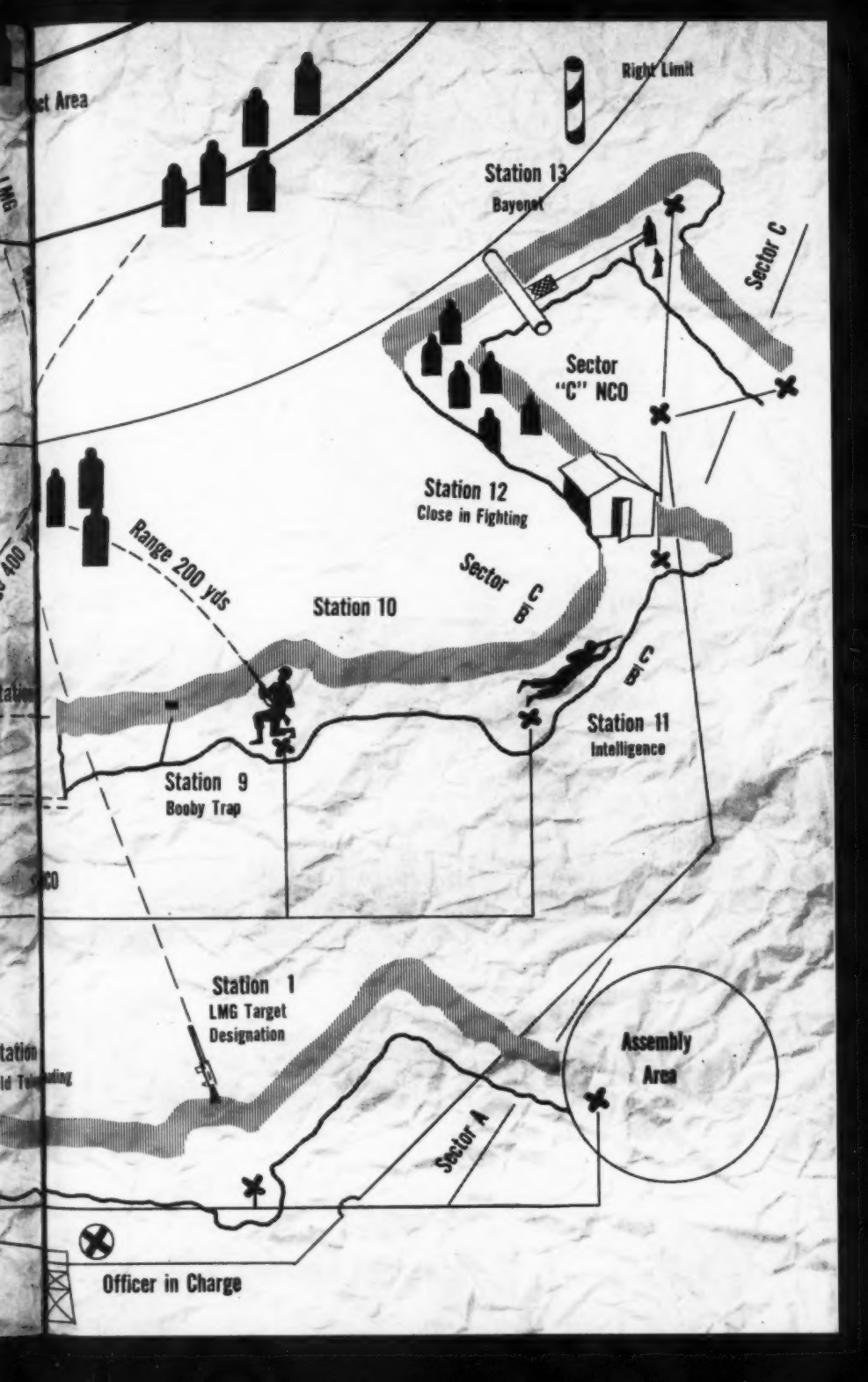


Dummy on heavy wheel cart mounted on rails descends incline upon release of control cable.



Dummy on hinged mount which swings into student at turn.


Left Limit
Legend
Grader
Control Telephone Wires
Range 25 yds
BAR Range 400 yds
LMG
Station 5
Hand Grenade
Station 6
First Aid
Station 4
Radio - Compass
Station 7
Barbed Wire
Station 3
BAR - Target Designation
Sector B/A
B/A
Sector "A" NCO


Right Limit
Station 13
Bayonet
Sector C
Sector
"C" NCO
Station 12
Close in Fighting
Range 200 yds
Station 10
Sector C B
Station 11
Intelligence
Station 9
Booby Trap
Station 1
LMG Target
Designation
Assembly
Area
Sector A
Officer in Charge

STATION	PURPOSE	FACILITIES
1	To test the student's practical knowledge of: 1. LMG loading, immediate action, correction of stoppages, setting of sights and firing. 2. Target determination for a given range, direction and type of target.	LMG set up in position with 30 rounds lying next to it. LMG has improper headspace which will not allow it to fire. Sign next to LMG: "FIRE 30 ROUNDS AT ENEMY RIFLEMEN IN LINE, LEFT FRONT, RANGE 600 YARDS."
2	To test the student's practical knowledge of: 1. Map coordinates and general map reading. 2. Use of field telephone (to include minor repair).	Map of local area with position of station located. Field telephone with wire leading to Sector NCO. One wire disconnected. Sign next to apparatus: "LOCATE CROSSROADS (ANY EASILY RECOGNIZABLE FEATURE IN IMPACT AREA) 800 YARDS TO YOUR FRONT ON THE MAP, AND CALL ITS COORDINATES IN ON THE FIELD PHONE." (YOU ARE "RED ABLE," YOU ARE CALLING "RED BAKER.")
3	To test the student's practical knowledge of: 1. BAR loading, immediate action, correction of stoppages and firing. 2. Target determination for a given range, direction and type of target.	BAR set up in position with one full magazine lying next to it. Tenth round in magazine is a dummy. Sign next to BAR: "FIRE ENFILADE FIRE UPON COLUMN OF ENEMY, RIGHT FRONT, RANGE 400 YARDS."
4	To test the student's practical knowledge of: 1. Use of the compass. 2. Use of the AN/PRC 6 radio and proper radio-telephone procedure.	AN/PRC 6 radio and lensatic compass. Sign next to apparatus: "GIVE MAGNETIC AZIMUTH TO TANK HULL TO THE FRONT, AND CALL THIS AZIMUTH ON THE RADIO." (YOU ARE "BLACKJACK RED." YOU ARE CALLING "BLACKJACK.")
5	To test the student's practical knowledge of the use of the hand grenade.	One (1) fragmentation hand grenade. Sign: "HAND GRENADE—TARGET 15 YARDS DIRECT FRONT."
6	To test the student's practical knowledge in methods of first aid, using only first aid packet.	Man with simulated belly wound (friendly soldier) yelling for water.
7	To test the student's practical knowledge in methods of crawling under barbed wire.	Double apron wire entanglement across slighty widened trench.
8	To test the student's practical knowledge in the detection of, and immediate protective action against, chemical agents.	A covered section of the trench at least 15 feet in length containing CN or CN-DN candles.
9	To test the student's practical knowledge of defense against booby traps.	Pull-type booby trap (training) with wire stretched across trench.

Chart: Detailed description of Examination Stations . . .

WHAT THE STUDENT SHOULD DO	WHAT THE GRADER DOES	SPECIAL CONSIDERATIONS
Load weapon, correct headspace, adjust sights and fire at correct group of targets. NOTE: With ground sloping toward impact area, safety stand would prevent fire from dropping into Sector "B." It should be designed so that the tallest man could not depress the muzzle far enough to create a hazard.	Check all actions of student—paying particular attention to safety. Upon departure of each student, resupply ammunition, readjust headspace and drop sights to 100 yards. Grade student.	There will be several groups of targets in the impact area. The student *must* fire at the target specified by instructions.
Locate designated feature, determine coordinates, and call in coordinates after connecting wire — using proper radio-telephone procedure.	Check actions of student. Listen to and grade student's information report. Disconnect wire upon student's departure. Grade student.	None.
Load weapon, adjust sights, select proper target and take proper immediate action upon stoppage caused by dummy round.	Check all actions of student—paying particular attention to safety. Upon departure of each student, resupply ammunition and drop sights to 100 yards. Grade student.	Student must select the correct group of targets from several groups, and must know what enfilade fire is.
Using compass, find magnetic azimuth to designated location and, using proper radio procedure, call this information in.	Grade student.	None.
Throw grenade at designated pit target in the approved manner.	Check actions of student, particularly with reference to safety. Observe strike of grenade. Resupply grenades upon departure of each student. Grade.	None.
Give proper first aid to wounded man using first aid kit.	Observe all actions of student and grade accordingly. Remove all first aid measures after departure of each student.	This station will be under or near overhead fire.
Using proper methods, go under the wire.	Observe and grade accordingly.	This station will be under or near overhead fire.
Using proper and rapid methods, detect chemical agents, put on protective mask, move through area, check for chemical agents and remove mask.	(Graders stationed at either end of tunnel will make observations.) Observe actions of students, paying particular attention to speed of student's reactions. Replace candles in order to maintain proper consistency of gas. Grade student.	Tunnel may become too dark for students wearing protective masks. Station will be under or near overhead fire.
Locate booby trap in path and disarm it properly.	Observe actions of students. Replace exploded booby traps and rearm disarmed booby traps. Grade student.	Station will be under or near overhead fire.

(Continued on next page.)

STATION	PURPOSE	FACILITIES
10	To test the student's practical knowledge of the proper use of the rifle grenade, using the M-1 Rifle.	Grenade launcher for M-1 Rifle and one (1) fragmentation rifle grenade. Sign next to apparatus: "FIRE RIFLE GRENADE AT GROUP OF RIFLEMEN, LEFT FRONT, RANGE: 200 YARDS."
11	To test the student's practical knowledge of the media of intelligence and his alertness to the possibility of gaining intelligence from a dead enemy.	Blood-soaked dummy of an aggressor officer with map, containing locations of weapons emplacements, in map case.
12	To test the student's practical knowledge of close combat fighting with the M-1 Rifle.	Section of trench leading toward impact area containing housefront, and numerous pop-up targets. One (1) clip of .30 caliber ammunition and one practice hand grenade issued to each student.
13	To test the student's practical knowledge of bayonet fighting.	

Chart: Detailed description of Examination Stations (Continued from page 45)

* * *

way, the NCO can make a report of student progress or of any emergencies that may arise, and he can notify the control agency when "time out" is needed to make adjustments to equipment or to resupply ammunition.

Each sector NCO (sectors A, B and C) has a direct telephone line to the control officer. This gives the officer maximum control (especially important in the event of an emergency), keeps him informed of the progress of the individual under test, and permits him to plot every soldier's location.

Realism. To achieve the desired realism, weapons are fired (or a recording of battle noises may be used if suitably amplified) and strategically located blocks of TNT are set off. Even the smells of battle are simulated. Overhead fire from sector A gives considerable realism and creates a mental hazard for the men in sector B. During the tests, all control and grader personnel remain as inconspicuous as possible (to increase the student's sense of being alone and to force him to rely on his own ability).

Safety. In our effort to obtain maximum realism, we cannot overlook the element of safety. If the tests are designed as suggested, all firing will remain in a localized danger area. Since sector A is on terrain which is higher than that of sector B, the overhead fire presents no hazard (the weapon at each live fire station is equipped with the necessary safety devices). Because terrain varies, a thorough safety check of

WHAT THE STUDENT SHOULD DO	WHAT THE GRADER DOES	SPECIAL CONSIDERATIONS
Fire the rifle grenade effectively at the prescribed target.	Observe actions of the students, paying particular attention to safety. Resupply ammunition upon departure of each student. Grade student.	None.
Observe dead officer as a possible medium of intelligence, search him and discover maps.	Observe actions of students. Take maps from students detecting and removing maps. Replace on dummy. Grade student.	This station would provide a good opportunity to offer a grisly sight and an evil stench — which could lead students to avoid same, and thus lose credit.
Upon receiving clip of ammunition and practice grenade, students will be directed to fix bayonets. Student should use grenade before entering door of housefront and then fire rifle at pop-up targets along trench.	Grader will issue ammunition and grenade and instruct student to fix his bayonet. After the student enters the doorway, grader will operate pop-up targets (observing student from right of housefront). Grade student.	Great care must be taken to insure that students expend all ammunition before reaching the turn and entering the bayonet phase of the course. Otherwise, Grader #13 will be jeopardized by fire.
To attack successfully each of several bayonet dummies presented.	Observe actions of student and manipulate bayonet targets as the student approaches. Grade student.	None.

* * *

every course must be made prior to its use. Rising ground (or a suitably constructed bunker) is desirable in the impact area.

As stated earlier, proper timing and control of the movement to each station is of primary importance. Examine the sketch on pages 42 and 43 again, and you note a safety officer and numerous other safety (or control) personnel. It follows that all standard range safety precautions must be observed. To prevent delay and to increase safety, a limit (determined by trial runs) must be placed on the time spent at each station.

Has this course been field tested? No. It represents only my idea. Certain bugs—not apparent at this time—may turn up when such a course is constructed and used. Changes may be necessary at certain stations, but again, only a trial run will give us this information. In any event, this course could prove to be of value at most of our training centers or, in a modified form, at smaller installations. Properly conducted, it could give us a big assist in our search to find our fighters and might help to provide us with the answer to the Infantry commander's perpetual query: "Will this man make a good combat soldier?"

LT MALONE (USMA 1952) has come up with another article that should stimulate considerable thought. His first contribution, "Bayonet," appeared in the October 1954 issue of *The Infantry School Quarterly*. The author is presently assigned to the 187th Airborne RCT.

QUIZ

ANSWER the following questions to determine whether you are a bolo, recruit, marksman, sharpshooter or expert. Each question is worth 10 pts.

1. The primary purpose in packing the barrel of the heavy machine gun, caliber .30 is to (select *one*):
   a. Prevent excessive play in the barrel and excessive dispersion of the shot group.
   b. Provide a means of lubricating the bearing surfaces of the barrel.
   c. Prevent water from leaking out of the water jacket.
   d. Reduce wear on the muzzle gland.
2. How many sniperscopes are there in an Infantry regiment?
3. What device is available within the rifle company for the detection of war gases?
4. On the new, M-series 2½ ton trucks, front wheel engagement is automatic when (select *one*):
   a. The truck is overloaded.
   b. Speed drops below five mph.
   c. Starting from a dead stop.
   d. Rear wheels lose traction.
5. What unit is responsible for manning the regimental observation posts?
6. Determine the number of aircraft (C-119 or C-123) required to air-land the initial echelon of an Infantry regiment preserving tactical integrity.
7. The maximum range of the 81mm mortar HE Light ammunition, when fired from the M-29 mortar, is (select *one*):
   a. 2000 yards.
   b. 2650 yards.
   c. 3300 yards.
   d. 4000 yards.
8. In a perimeter defense the battalion position is organized so that (select *one*):
   a. Troops can be moved to previously prepared positions to meet an enemy attack from any direction.
   b. Enemy attacks from any direction can be engaged simultaneously.
   c. A major portion of the battalion is held in mobile reserve.
   d. All troops except service and command elements are on the main line of resistance.
9. What is the maximum effective range of the 106mm recoilless rifle for a moving target? (Select *one*):
   a. 1300 yards.
   b. 1500 yards.
   c. 1100 yards.
   d. 2000 yards.
10. What are the principal functions of a regimental Class V supply system?

For answers see page 93.

THE school of hard knocks postulates that experience is man's best teacher. This is certainly true, but the lessons taught by experience are often expensive ones—as many an incoming company commander would agree after a joint inventory of a supply room. Too often we become aware of the dangers inherent in "per joint inventory" only after it's too late and we have had to dig into our wallets to pay for our "lesson." In my opinion, this can be avoided if we learn to profit by the experience of others.

never sign until you're sure

Supply education need not be an expensive experience.

Capt Joseph H. Rapp

Company Supply Officer

Many officers are fortunate enough to have served their supply apprenticeship as a company supply officer. If the individual took this in-addition job seriously, and worked with a supply-conscious company commander, he soon possessed a substantial knowledge of supply records and procedures.

But not everyone has had such an opportunity. Many of us have found our information on the subject limited, and are frequently quite naïve about supply. This naïveté can result in considerable grief—of the empty-wallet variety—for the new commander. I'd like to offer

some practical suggestions that can help to avoid such situations.

Hints that Help

It would take more than the space available to discuss all of the things to do and not to do. We will consider only the major items that the new commander must know to protect his own as well as the government's best interests.

Show Me

Every new commander must adopt a polite and tactful, but definite "show me" attitude when taking over the property of a unit. To take anyone's word that an item of equipment is present when you have not actually seen it, is to court disaster. A diplomatic "show me" will result in a thorough personal knowledge of the status of the records and equipment you are to take over. It will create an atmosphere free of friction and with no expensive regrets for either party concerned. If the outgoing CO is an experienced commander, he will understand your desire to see and account for all property before signing. If he balks—stick to your guns and refer him to SR **735-30-1.**

Joint Inventory

This SR requires that an inventory be made by the outgoing and incoming commanders before the new CO signs for the property. The new commander must satisfy himself that all property is, in fact, on hand and in serviceable condition. Remember, a company commander runs a big business—a business with assets that are often in excess of a million dollars!

Unit Property Books

Each item charged to the unit (and the quantity of each) is found in the unit property books. In a line company there will be at least two of these. One is the **Unit Property Book**, which contains a page for each item of TO&E equipment and T/A 21 clothing and equipment for the particular type unit. The other, the **Station Property Book**, contains a page for each item of station property actually issued to the unit.

Both books are composed of loose leaf pages clamped securely into a binder cover. The last page of each contains a certificate signed by the company commander which states that he is responsible for the items and quantities listed on each page.

At the completion of the inventory, each page is marked in ink (black or blue black) with the phrase "per joint inventory" and the *actual* quantity of the item accounted for by the inventory listed opposite it. This number should represent the quantity of the specific item charged to the unit. If these numbers do not tally out the same, then the outgoing commander must account for the difference.

Loose Leaf Pages Get Lost

Sometimes the pages* of one or both books fall out or are mislaid. If this hap-

References that will help the new commander

AR 735-150 & SR 735-150-1	Property Accountability (Accounting for Lost, Damaged & Destroyed Property).
SR 310-90-1 (Sec. VIII)	Guide for Publications Required at Company Level.
SR 735-6-1	Transfers of Property Accountability & Responsibility.
SR 735-30-1	Property Accountability (Supply & Property Accounting Procedures for Organizations & Units).
TM 38-403	Station Supply Procedure.
TO&E 7-17	Rifle Company Infantry Regiment (or other applicable TO&E).
TA 20	Equipment for Posts, Camps and Stations.
TA 21	Clothing and Equipment.

*The books are made up of loose leaf pages to facilitate making changes, when necessary, to TO&E's.

pens, and the new CO fails to discover the error before signing, he is still responsible for the item on the page.

What To Do About It?

Don't let it happen. The organizational supply officer (usually the regimental S4) is required to maintain a current record of property book balances in each unit.

It's best to make a list of every item you find in your property books. Take this list to the office of the organizational supply officer and compare the items you listed with the records of your unit's property book balances. This comparison will either verify the accuracy of the unit's property books or reveal any existing discrepancies. If discrepancies exist, they should either be accounted for, or, where possible, corrected.

Use the lists you made during the actual counting. By using a red check for each item that is on hand, you will avoid mistakes and have a systematic means of accounting.

Counting Property

Once the incoming commander is satisfied that all property books are correct, the actual counting begins. This is not, as some people think, the simple process of merely counting the items in the two property books. We must, in many cases, count their component parts.

Take an entry like this: Range, field, M-1937—3. Does the new commander expect to see only three aluminum cabinets with a gasoline fire unit inside each one? If this is all he looks for, he's heading for trouble—because there are certain component parts of this one item to be counted. These include 32 one-gallon cans, and cooking forks, basting spoons, stock pots and other items.

At this point—remember—you need a list of the component parts of the items found on your property books. You should get this list before the property

CAPTAIN RAPP (ROTC, 1950, Ohio Univ) has been a platoon leader and a company commander in garrison and in combat (Korea). He tells us that "supply education for a new commander need not be an expensive experience." The author presents numerous tips that will save new company commanders work, worry and money. Capt Rapp is presently an instructor with the Staff Department, TIS.

counting begins. Many outfits make it mandatory for a component parts list to be attached to the reverse side of the page in the property book which lists them. When this is the case, the job is comparatively simple. When this is not the case—get the necessary list of component parts.

One officer who failed to do this learned an expensive lesson. He inventoried an armorer's tool set by merely looking at the chest. He accepted the item as complete.

When his tour was over and a new company commander arrived, the joint inventory began. To the outgoing commander's chagrin, his replacement counted every item in the tool set. The set was incomplete. The result: the victim of carelessness paid $12.00 for the missing gear.

When the new CO was later asked why he was particularly suspicious of the gear in the tool set, he laughed and said, "I was caught short in a similar manner about two years ago. This taught me that there is no reason why I should pay for another man's carelessness or permit someone else to pay for my mistakes."

Borrowing

Many commanders discover, too late, that borrowing can cause them considerable grief. Borrowed items such as sheets, used to tide a unit over until the laundry arrives, are often forgotten during an inventory. As a result, the borrowed item is counted. The day of reckoning comes when the new commander

must return the item and, in many cases, make up the miscount out of his own pocket.

If borrowing is necessary, a hand receipt in duplicate should be prepared. The original stays with the officer responsible for the property . . . the duplicate goes to the borrower. Before a joint inventory, it is the responsibility of the new commander to ask to see all hand receipts. A settlement (when needed) may require a return of the borrowed article or the destruction of the old hand receipt and the preparation of a new one to be signed by the new commander. If the latter is required, make certain you actually see the item and know its condition.

Hand receipts do not usually create a problem. However, it is wise to place an announcement in the official section of the Post Daily Bulletin notifying all holders of hand receipts—to or from the unit you are about to take over—that these receipts must be renewed because of a change in commanders.

Unauthorized Lending and Borrowing

In an effort to cover shortages prior to an inventory, supply personnel will sometimes borrow equipment temporarily. This is usually a sub rosa affair without benefit of paper work. If this occurs (and it has) without the knowledge of either the outgoing or incoming CO, it often presents a real problem for the new commander. This is particularly difficult to detect during an inventory, especially when the borrowed articles make up for an identical shortage of the same article. The only real solution is to count suspect items like sheets, pillow cases, blankets and cooks' whites at the beginning of the inventory, somewhere in the middle of it, and just before you finish. Articles which have serial numbers (e.g., weapons) can easily be checked by looking on the back of the appropriate page in the Unit Property Book. If there are, for example, five pistols—each will be listed by serial number. This is not intended to imply that all supply personnel borrow to cover shortages, but some will—so the new CO must act accordingly to protect himself.

Nomenclature

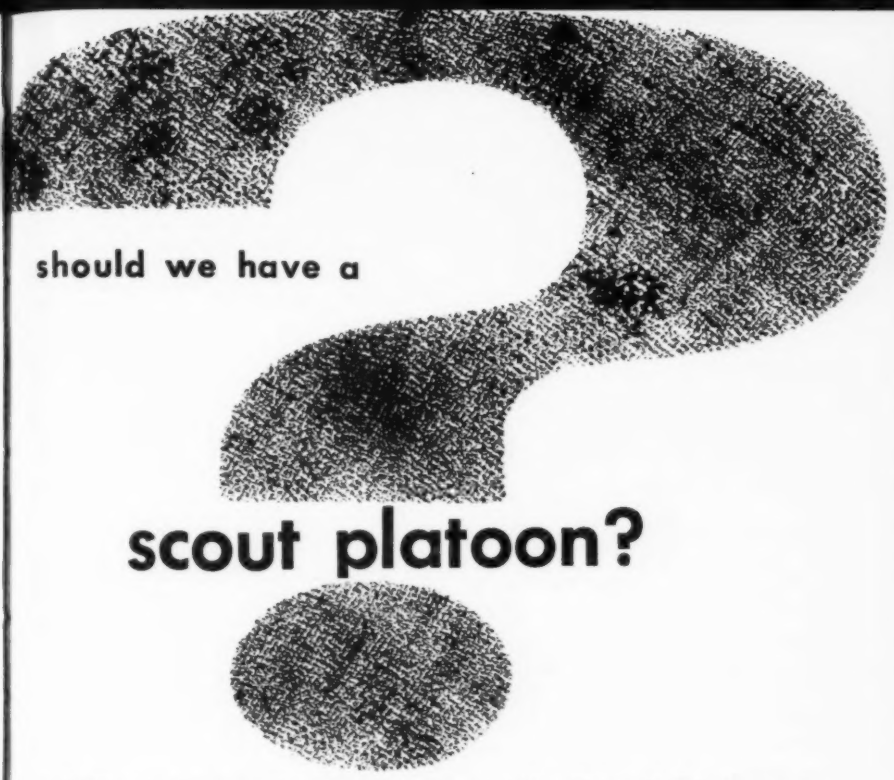
A knowledge of the identifying names of various pieces of property is essential. Take the locker (trunk) for example. There may be two types in the company—one constructed of wood and another constructed of steel. The price difference, as can be surmised, is great. Be certain that items like these are properly identified before you sign for them.

It's Work

To be sure that you sign only for property that is legitimately within the unit—is work. Don't fall into the category of officers who believe that "property never gets lost, it just gets redistributed." We won't quibble over the correctness of the statement, but we know many commanders who have bled from the wallet because of it.

Once the new CO is assured that all is correct, and he signs for the property—his real task begins. He must exercise constant supervision over supply personnel, both personally and through his supply officer. He must make frequent partial or complete inventories of property, and faithfully abide by SR 735-30-1 which calls for a semi-annual property inventory. "Trades" or "deals," involving property, should be forbidden. The CO must learn to rely only on what he sees on verified supply records.

While personal experience may be the best teacher, the new commander might well heed Bismarck's advice . . . "A fool can profit by his own experience, but I prefer to profit from the experience of others." This certainly applies to matters involving company property turnovers and supply.



THE attack was moving smoothly—too smoothly. Easy and Fox Companies were half way to their first objectives, moving swiftly under fire support, reporting no casualties. Yet this was to have been a tough assault. The enemy had mortars and knew how to use them. But where were they? Why weren't they firing? As if in answer, a dirt-colored burst flowered among the moving figures on the hillside. Then, quickly, another and another.

The AN/PRC 10 crackled portentously. "Eagle 6, this is Rooster 6. We are receiving mortar fire in six-round volleys. Coming in close and following us. I think it is observed. Advance continuing, but we're spread out and moving slower. Am requesting smoke on probable OP. Over."

Colonel Ord watched the explosions chop and burrow into the hill. The gunners knew their job: the fire was appallingly accurate. His hands clenched helplessly.

"Larson, have you ever tried boxing blindfolded?"

The S3 stared at him across a terrain map. "What was that, sir?"

But the colonel was a dozen years and half the world away . . . . "Why, I could lick you blindfolded!" He had tossed off the remark thoughtlessly, jokingly—and jokingly, little Ricker had taken up his challenge. He remembered it all: the sweat-and-shower smell of the gym, the noisy laughter of his friends,

lt col john w. medusky

the repeated jar of fists coming out of nowhere and his own fists hitting back at nothing. Sweat soaked the handkerchief across his eyes, and he was caught in the strangling panic of fighting blind. He felt that way now, and they must be feeling it too—the tiny figures straggling loosely on the hill, no longer moving forward. If *this* attack failed. . . .

The radio sputtered back to life. "Eagle 6, this is Ranger 2. Eagle 6, this is Ranger 2. Have positions under observation. Will adjust fire."

The colonel smiled with relief.

"Looks like the Scouts are on it," he said. "Thank heaven for my 'extra eyes'!"

Who are "the Scouts"? At the moment, they exist only as an idea. In every battalion, you will find soldiers outstanding for courage and initiative, eager for the perilous and the unusual. These are our embryo Scouts. At present, although they contribute to the performance of their squads, their individual capacities are not fully exploited. Train these men—band them together in a small unit at battalion level—and a whole range of exciting possibilities opens up.

Training

The Scouts would be volunteers. Each group, drawn from a single battalion, would return to it after training. This would counteract the selfish tendency of some commanders to withhold their best men.

Scout training would be designed to impose such mental and physical stress that it would eliminate trainees unable to endure the strain of scouting. To secure the finest fighting men, we would accept three times as many volunteers as are actually needed and weed out the lower two thirds. The initial groups would receive Ranger training as far as possible, and unit training would supplement the Ranger course. Essential subjects in which proficiency would be stressed are:

Scouting and Patrolling.
Adjustment of Mortar and Artillery Fire.
Radio Operation and Security.
Unarmed Combat and Improvised Killing Methods.
BAR, M1 and Light Machine Gun.
Combat Intelligence.
Map and Aerial Photograph Reading.
Survival Techniques.

Replacements would be furnished by battalion, and trained at division level by experienced Scouts.

Organization

The Scouts would form a separate platoon within the Infantry battalion. The actual operating unit would be a three-man squad, including a sergeant first class (the squad leader) and two Scouts (a sergeant and a corporal). Six of these squads, plus a platoon leader and assistant platoon leader—master sergeant and sergeant first class, respectively—bring the platoon to a total strength of 20 men.

Equipment

The Scout is still a rifleman, and his individual weapon remains the M1. The only special equipment specifically authorized for the Scout Platoon would be 3 AN/PRC 10 radios. For specific missions, additional equipment could be borrowed within the battalion.

FROM Rogers' Rangers to Merrill's Marauders, our Infantrymen have made outstanding scouts. LT COL JOHN W. MEDUSKY seeks to exploit this American knack in order to give every battalion "extra eyes."

Col Medusky served with 5th Army G2 in Africa and Italy, with the 82d Airborne in France and Germany, and as a battalion CO in Korea. A graduate of the USMA and the Associate Advanced Course, TIS, he is now executive officer of the Staff Department, TIS. You will remember "Surprise Package," his vivid account of a covering force in our April issue.

Missions

Natural ability, special training and teamwork would enable Scouts to perform intelligence missions far beyond the capacity of the average rifleman.

In the attack, Scout squads would set out 24 to 72 hours before the assault. These squads would penetrate 2,000 to 6,000 yards, establish themselves in good observation posts and open radio contacts with their units. Until friendly forces reached them, they would stay in position, reporting the location of enemy reserves, artillery and mortar positions, armored assembly areas and movement of counterattacking units. They would be able to adjust observed fire on enemy installations far behind his MLR.

In the defense, Scout squads could roam 2,000 to 4,000 yards behind the enemy lines. There they would be able to take prisoners, locate troop, supply and tank concentrations and note evidences of reinforcement or relief.

Incentives

Immediately upon assignment to the platoon, qualified Scouts would be promoted to corporal. The Scout squads would be relieved from all other combat duties. Scouts on temporary duty would train replacements at division level. As always, in specially selected units, enthusiasm and *esprit* would soar.

General Considerations

Small groups of highly trained men can penetrate enemy positions without great difficulty. The casualty rate should be relatively low. It is possible, however, that after prolonged combat, some men may not wish to continue with this work. They should be returned to their companies with every precaution against censure or prejudice. The original loss to these companies is more than balanced by the gain to the battalion.

Every commander who has tried "fighting blind" will recognize the value of a Scout platoon and its extra eyes. Matched against an enemy whose weight in men and materiel equals our own, we win not by the sheer impact of our punches, but by their accuracy. The ability to "see" deep into enemy lines—into defiladed positions—into the secrets of camouflage and concealment—may prove the decisive advantage in a battle—or a war.

Publication of this article should not necessarily be interpreted as reflecting the thought of The Infantry School or *The Infantry School Quarterly*.

NEXT WEEK, WAUKEGAN!

Even old time actors on the circuit didn't travel the way soldiers do—and remember, we have no way of tracing *you*. If you don't notify us of your new address, chances are the *Quarterly* will never darken your door again! But we want you to have your magazine—on time. Just send us a change of address card—and all is forgiven!

COMPANY

COMMANDER

I saw you at St. Lo and along the hedgerows of Normandy leading assault waves, signalling "Follow me!"

I saw you going grimly through casualty lists in that fateful summer of 1945. Late into the night, I saw your light burning as you wrote those hardest of all letters — letters to others' homes.

You were lean and gray when those who remained of our old outfit pulled back to garrison in the States. I saw lines in your face, and a different look. And I knew why.

I watched you take recruits from Fort Sam Houston, Slocum, Ord, and mold them into soldiers. On the range, I watched you sweat it out with men who could not seem to shoot—I saw you turn bolos into marksmen. You marched beside them, fresher than the youngest, and for you, they went farther than anyone thought possible.

I know the hours you spent in the orderly room—listening to gripes, grievances, anxieties. You made yourself responsible, not only for the company as a company, but for the men as men: they brought you their problems, and you did not fail them.

I saw you hand out gigs aplenty at inspections. I heard you rock the men's frames —hard. Remembering what you remember, I understood. And at Officers' Call, I know you boasted of the best damn outfit in the regiment.

You made it that. You were more than a commander—you were always a leader. Is it surprising that we followed you?

M/Sgt Herbert E. Smith, USA, Ret.

The following information provides a means of keeping up-to-date on matters of professional interest.

UNDER TEST

Hot Weather Combat Uniforms. Four hot weather uniforms are under test for desert, jungle and hot-temperate summer combat use. These uniforms are identical in design and provide improved appearance with functionally correct combat dress. The uniforms are colored tan for desert use and green for jungle and temperate wear. The jacket resembles a bush jacket and is provided with a belt for wear in garrison. The durability, comfort and protective features of these uniforms have been determined during tests at Yuma, Arizona and Fort Benning, Georgia. Further testing is scheduled to be conducted at Fort Kobbe, Canal Zone and Fort Devens, Mass., under simulated combat conditions during 1955. The uniforms are made of lightweight cotton poplin, wind resistant sateen and carded sateen fabrics.

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Universal Carrying Strap. The universal carrying strap consists of a nylon web strap and lightweight magnesium hardware. It weighs less than a pound and is designed to carry all man-portable Infantry loads of weapons, ammunition and rations. This strap can be rolled and placed in the pack when not used and will replace many varieties of standard ammunition carry bags and straps. It is being tested by the same troops used in the hot weather uniform tests.

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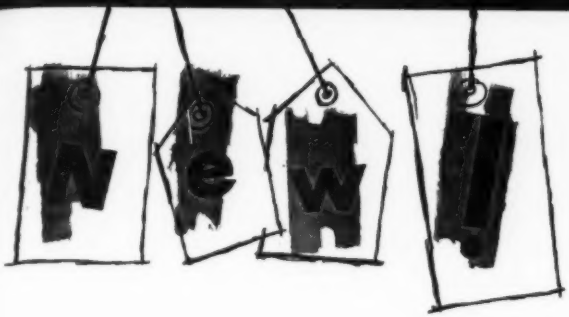
A Steel Reinforced Bridge for the Heavy Mortar. If tests are successful, it will replace the magnesium bridge which proved unsatisfactory when subjected to Arctic conditions.

•

Individual Load Carrying Equipment. This equipment consists of a pistol belt, H-harness, combat pack and two ammunition pouches. The new equipment will provide increased carrying comfort and greater flexibility, and will weigh less than the standard equipment now used. It is anticipated that approximately 20 items of equipment now used to carry loads may be eliminated if the new system is found to be acceptable. The equipment was tested at Yuma, Arizona and Ft. Benning, Ga., during 1954 and will be further tested at Panama and Ft. Devens, Mass., during 1955.



TIPS

Vu-Graph — Master Positives Made Easy. The difficulties sometimes experienced in making master positives for Vu-graph transparency reproductions or paper prints can be reduced by using Ozalid reversal foil. This method (described below) eliminates the need for a photo film positive (reverse negative) and produces a master yellow-orange positive from an ordinary photo negative. This positive is then used in the usual manner by means of the portable printer and developer to make either transparencies or paper prints.

The following equipment is needed: a. Portable transparency printer and developer, Signal Corps stock no. 8A3112, code no. 802581000; b. Ordinary photo negative (should be 5″ x 7″ or 8″ x 10″ for Vu-graph); and c. Ozalid reversal foil (EX-503-LCR).

The method used: a. Place emulsion side of negative against emulsion side of foil; b. Expose in portable printer for approximately two minutes (the longer the exposure, the denser the positive); c. Place foil in developer unit (to develop) for approximately five minutes; d. Wash foil in warm, running water for one minute (Note: Reversal foil is easily scratched. It must be handled very carefully.); f. Blot foil between paper towels. *Do Not Rub.* The result is the yellow-orange positive mentioned above. From these positives, any number of transparencies can be made which will be suitable for showing in Vu-graph machines.

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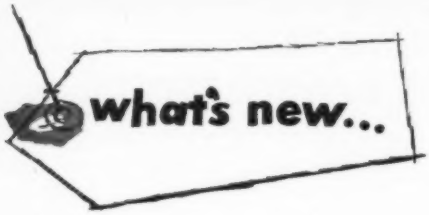
Infantry Heavy Mortar Officer's Course. An Infantry Heavy Mortar Officer's Course is being conducted at The Infantry School. This six-week course is designed to train officers to command, supervise and direct the fires of Infantry heavy mortar units which support the combat elements. The course is open to commissioned officers on active duty or from USAR or National Guard units. To be eligible, an officer must have previous credit for the Infantry Officer's Basic Course or the Associate Infantry Company Officer's Course, or be a graduate of the Infantry Officer Candidate Course.

The six-week training period includes instruction in survey, fire control, forward observation, fire planning, organization, tactics and signal communications.

Interested and qualified officers are encouraged to attend this course.



NEW AND APPROVED

New Tests For Qualifying Army Drivers. New procedures for qualifying army motor vehicle operators are announced in AR 600-55 dated 29 Oct 1954. Under the new system, two batteries of tests are substituted for procedures formerly conducted under DA PRT 565. Battery I is a test responsibility of the reception station commanders, while Battery II is a function of the license-issuing installation.

A major change is the replacement of the Driver's Information Test (DA PRT 552) with a series of three written examinations titled, "Emergency Judgement Test," "Two-Hand Coordination Test" and "Visual Judgment Test." Detailed information covering specific test materials and instructional manuals necessary to establish the new program is outlined in DA Circular 124, dated 29 Oct 1954.

Implementation of this procedure begins with the issuance of new licenses and the renewal of existing licenses, the latter to be completed by 29 Oct 1955.

FIELD MANUALS

Revised. FM 23-32, "3.5-inch Rocket Launchers." This revised manual was forwarded to the printers on 21 March 1955 and should be ready for distribution. Since the 2.36-inch rocket launcher has been declared obsolete, this weapon has been eliminated from the revised manual.

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Field Manuals 105-5, "Umpire Control" and **21-5,** "Military Training" are now under revision. The publication date is unknown at this time.

•

Changed. FM 23-5, Change 1, "U.S. Rifle Caliber .30, M1." This change has been printed and distributed. The new assault fire technique is outlined in this change.

•

Changed. FM 22-100, Change 1, "Command and Leadership for the Small Unit Leader." This change clarifies the troop information responsibilities of the small unit leader.

•

Changed. TM 57-220, Technical Training of Parachutists." Change 1, printed 20 July 1954, and Change 2, printed 9 November 1954, outline the latest methods of jumping with an individual combat load and with the T-10 parachute.

•

ATP 21-115, November 1954, Basic Combat Program (8 weeks) for Male Military Personnel Without Prior Service. Prescribes a common basic combat training for all personnel in the Infantry regiment.

TRAINING CIRCULARS

TC 23-1, "Technique of Rifle Fire at Night Without Artificial Illumination," has been printed and distributed. This circular is a result of an intensive study by both civilian (HUMRRO) and military agencies and provides the latest guidance on rifle fire during hours of darkness.

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A training circular dealing with the guidance and tactical employment of the Infantry scout dog platoon is currently under preparation.

NEW

Training Films. Ten Class "E" films (average running time, five minutes each) have recently been completed at Fort Benning and are awaiting release. These are the "how to do it" films dealing with individual skills which were referred to in "What's New," January 1955.

The new films are concerned with only one teaching point and use extreme close-ups to show each teaching step in detail. The films are especially valuable when instruction schedules do not allow time for lengthier films. They should be implemented by the use of question and answer periods immediately following presentation. These new films were conceived by Major Frank L. Morang (Ret) and were produced under his direction.

Here is a list of the 10 films:

1-7. Cycle of Operation, Caliber .30 Machine Gun. This is a series of seven films covering individual teaching points as they apply to the .30 caliber machine gun. The titles are: (a) Feeding, (b) Chambering, (c) Locking, (d) Firing, (e) Unlocking, (f) Extraction and Ejection, (g) Cocking.

8. Trigger Squeeze (M1 Rifle). This film shows what happens inside the trigger housing group when the trigger is pulled. Next, it teaches the correct method of trigger squeeze and it ends by re-emphasizing the major points to be remembered.

9. Cooling System, Caliber .30 Machine Gun M1917A1. Shows the inside of the water jacket and very clearly indicates the purpose of the steam tubes.

10. Restoration of Balance, 57mm Recoilless Rifle. This films explains what happens to this weapon after escaping gas has worn down the walls of the breech block. Teaches the student how to replace throat rings and breech blocks.

Critiques of current training films and suggestions for future films are welcome. Address suggestions and inquiries to: Chief, Visual Aids Section, Publications and Visual Aids Office, The Infantry School.

Get there . . . Get it . . .

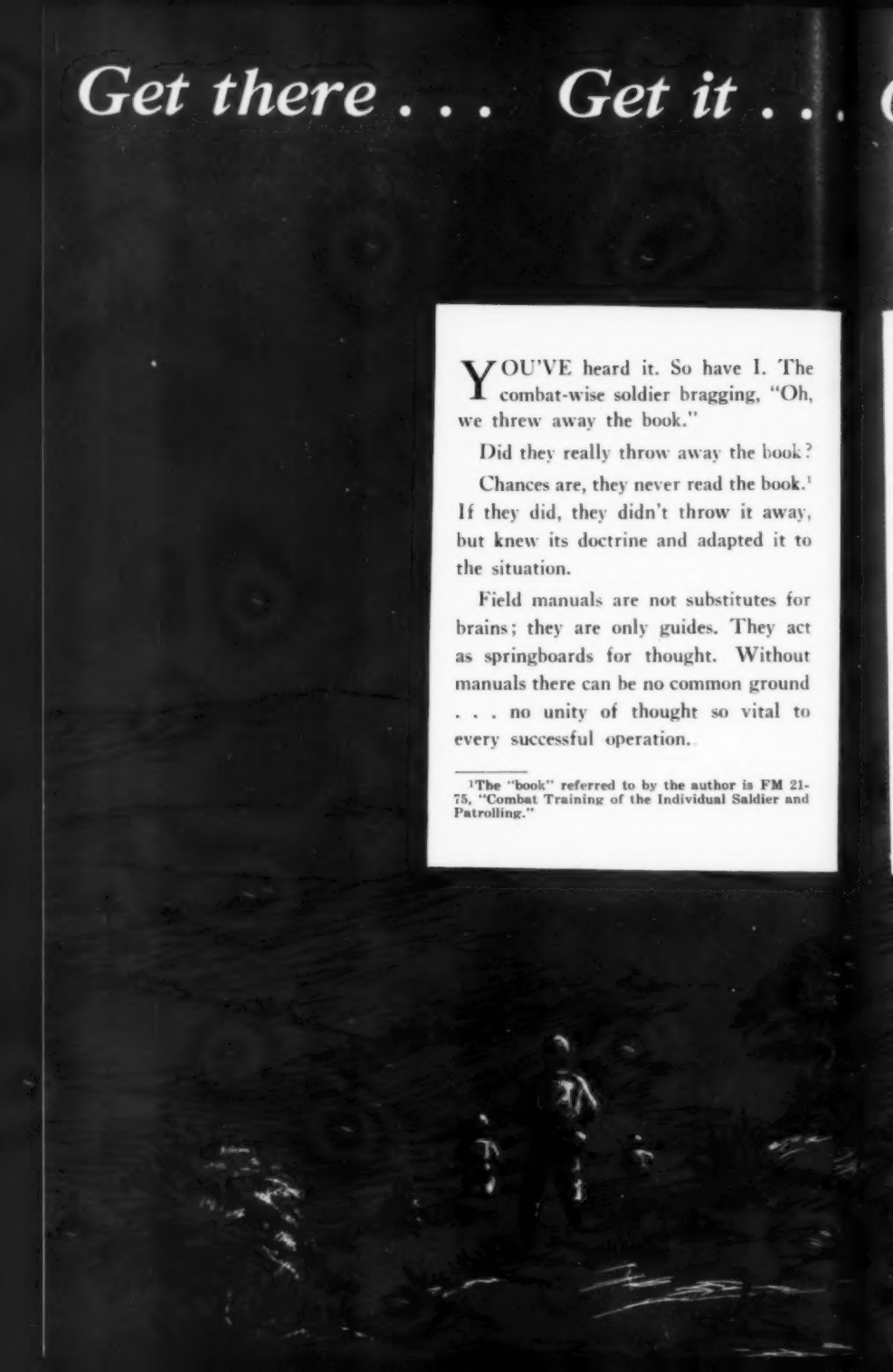
YOU'VE heard it. So have I. The combat-wise soldier bragging, "Oh, we threw away the book."

Did they really throw away the book?

Chances are, they never read the book.[1] If they did, they didn't throw it away, but knew its doctrine and adapted it to the situation.

Field manuals are not substitutes for brains; they are only guides. They act as springboards for thought. Without manuals there can be no common ground . . . no unity of thought so vital to every successful operation.

[1]The "book" referred to by the author is FM 21-75, "Combat Training of the Individual Saldier and Patrolling."



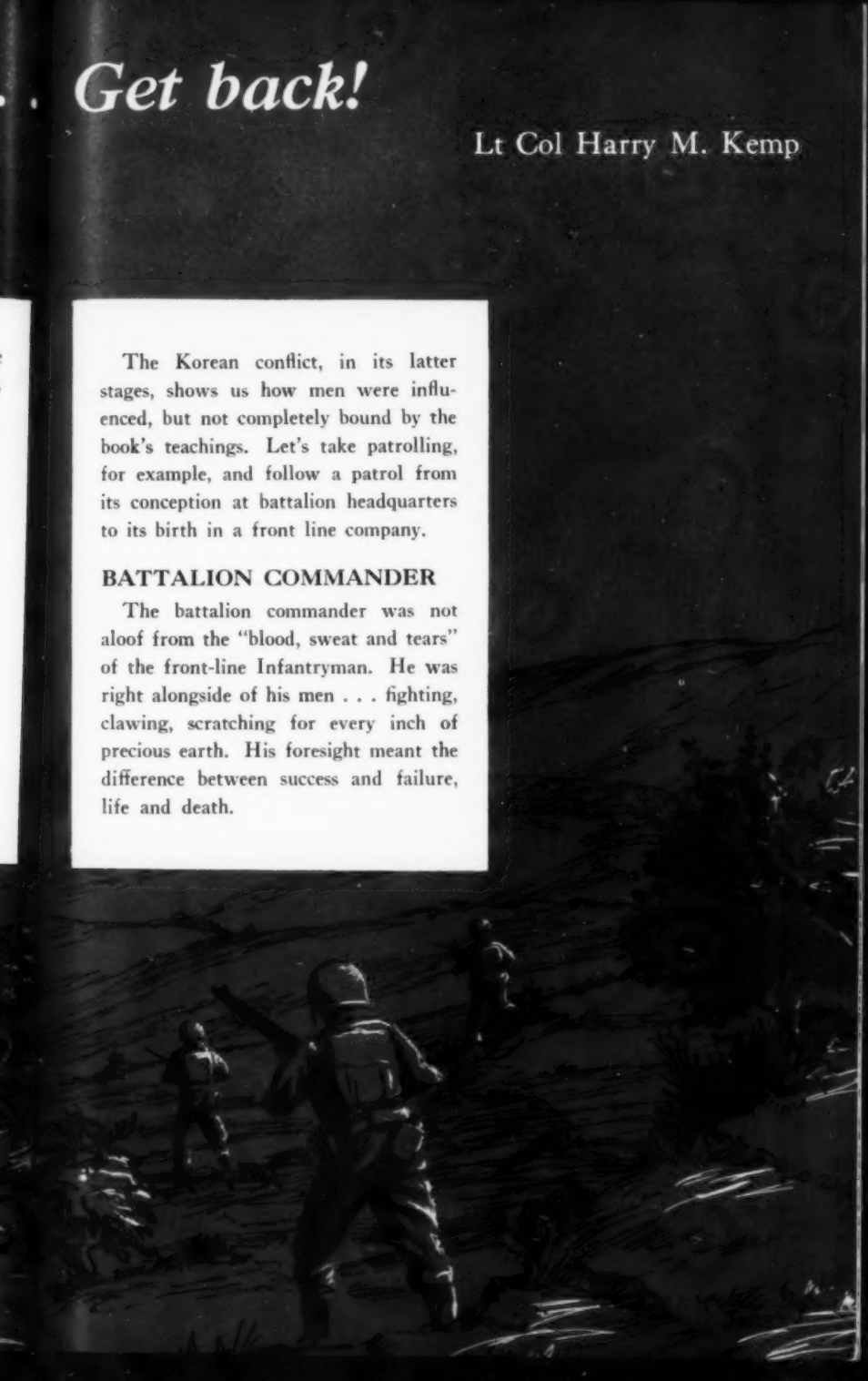
. . Get back!

Lt Col Harry M. Kemp

The Korean conflict, in its latter stages, shows us how men were influenced, but not completely bound by the book's teachings. Let's take patrolling, for example, and follow a patrol from its conception at battalion headquarters to its birth in a front line company.

BATTALION COMMANDER

The battalion commander was not aloof from the "blood, sweat and tears" of the front-line Infantryman. He was right alongside of his men . . . fighting, clawing, scratching for every inch of precious earth. His foresight meant the difference between success and failure, life and death.



Concerning patrols in Korea, the battalion commander[2] did the following:

1. Initiated the patrol.

He decided to send a patrol to execute a reconnaissance, combat, or security mission.

2. Chose the patrol leader.

This was the exception rather than the rule. Patrol leaders were usually tapped for the mission by the company commander, by roster. The battalion commander chose the patrol leader only for a special mission—where an individual's physical or mental qualifications, or his knowledge of terrain and enemy positions was of the utmost importance.

3. Issued patrol orders.

Except in emergencies, patrol orders were issued well in advance. They were often of the overlay type, and required four days of patrol leader action: a day to study the order and select men, weapons and equipment; a day to study the terrain, coordinate supporting weapons and prepare the order for the patrol; a day to distribute the order and rehearse; and a final day for rest, restudy of terrain, recheck of fire support, test firing of weapons and test and inspection of patrol equipment.

Within the patrol order, the commander prescribed the general size and division of the patrol, special weapons or equipment, communications, routes, check points, time of departure and return.

In selecting the route, the commander made sure a day patrol availed itself of maximum cover and concealment. For night missions he sought terrain permitting silent movement. The patrol used the same route in returning to friendly lines unless an ambush was anticipated, in which event an alternate route was used.

The commander varied the departure and return time patterns to avoid enemy ambush. He allowed just enough time to complete the mission and return without running into a friendly patrol on its way in or out. The static lines required constant patrolling. The battalion commander became something akin to a train dispatcher. But, in combat, the trains had to be on the right track—at the right time!

4. Allotted fire support.

Every weapon in supporting range was available to the patrol, including "Moonlight Charlie," the ground-support searchlight.

A front-line battalion would normally have one friendly patrol operating to its front at any given time, drawn either from battalion or from a battalion in reserve. With the firepower divided among the several patrols in the regimental sector, a patrol was virtually assured of each type of firepower: direct support light artillery, heavy mortars, and tank and ground support AAA weapons not attached to battalions. Coordination between battalions and regiments insured that the correct firepower was on the target as soon as it was called for.

Battalion also specified whether a mortar or artillery forward observer would accompany patrols larger than platoon size. The observers requested and adjusted all indirect fire and provided, through their radio nets, channels for emergency communications.

5. Scheduled rehearsals.

At least one rehearsal was conducted

[2]In this sense we refer to the majority of battalion commanders. In a like manner, this will apply to references to company commanders and patrol leaders.

over terrain similar to that which the patrol would cross. For night patrols, both day and night rehearsals were held. Company, battalion and, occasionally, regimental and division observers were present at all rehearsals.

6. Coordinated patrol actions.

Patrol plans were exchanged by battalion commanders approximately 10 days in advance of the patrol action. Included in the plans were the patrol's numerical designation, type, strength and general route. This early distribution allowed for changes to avoid conflicts.

7. Set debriefing.

If the patrol made contact with the enemy or secured important information, it was immediately debriefed by the battalion S2. Routine patrols which did not make contact were debriefed 8 to 12 hours after their return. Division and regimental visitors often sat in on the debriefing of key patrol members.

8. Supplied staff assistance.

The S2 supplied maps, aerial photos and pertinent information gathered by previous patrols. He had an intelligence specialist ready to accompany the patrol, and arranged staff assistance.

The artillery liaison officer and heavy weapons company commander submitted supporting weapons information, coordinated the patrol's support, and had weapons registered on target areas or possible targets.

The communications officer designated frequencies and call signs and ascertained whether extra equipment was necessary.

The pioneer and ammunition platoon leader prepared the required special explosives or demolitions.

The motor transportation officer supplied and organized the patrol's transportation to and from rehearsal and, often, to the battle position near the jump off location.

DID our patrols throw away the book when they left friendly lines in Korea? In answering this question, LT COL HARRY M. KEMP explodes another popular myth.

Col Kemp served in Europe with the 109th Infantry Regiment during WW II. In Korea he served as a battalion CO and regimental executive officer with the 38th Infantry. He is currently a student at The Command & General Staff College, Fort Leavenworth, Kansas.

9. Provided alert force.

A "fire brigade," thoroughly informed of the plans and actions of the original patrol, remained on call near the main battle position. This force, about the size of a rifle platoon or the same size as the endangered patrol, came to the rescue if the patrol encountered more resistance than it could handle.

COMPANY COMMANDER

Everyone from army to battalion had something to say about the patrol's preparation and execution. But whose patrol was it? The company commander's. His duties in Korean combat included:

1. Selecting the platoon or squad.

He kept the duty roster for officers and platoons. Korea, in the latter stages, was a static and trench war. However, for the Infantry rifle company it was a bloody one. The rosters made certain that each officer and enlisted man had an equal share of patrolling activity.

2. Administration.

The company commander was go-between for battalion commander, staff and patrol leader. He replaced men who were pulled out at the last minute for relief and rehabilitation, traded weapons to get the best support for his patrol and borrowed extra communications equipment, helped complete the fire support plan and, more important, gave of his knowledge of patrolling. He arranged

for rest and a hot meal before the patrol departed and after their return.

3. General.

The company commander's job didn't end when the patrol worked its way out through the quiet, dismal space between the lines. At his observation post the CO maintained communication with the patrol leader, collected information, received situation reports, reported the activity to battalion and counseled uncertain patrol leaders. In one day, the rifle company commander might have had one patrol in action, one rehearsing and a third beginning initial preparations.

Figure 1. Soldier set for day patrol.

PATROL LEADER

The key man in any patrol is the patrol leader. Every echelon told him what to do and how to do it, but when he left friendly lines—he was on his own.

Did he use the doctrine, tactics and techniques advocated by the "book"? Or did he "play it by ear"?

He didn't play it by ear. Rather he heeded the book . . . the same one used all over Korea by patrol leaders. A book designed to keep him and his men alive.

Prior to receiving the written battalion order, the patrol leader got a warning order. He knew the patrol's type, general composition and destination. He began planning for his order in spare moments snatched from the platoon's hour-to-hour and day-to-day existence. He amassed as much information as possible. Every manner of reconnaissance, from personal observation to battalion intelligence, was diligently checked. His patrol's chances, and his own, were linked to his efforts. He could not afford to be lazy.

The book notes certain personal preparations that must be made by the patrol members before the order is issued (e.g., they must check weapons and equipment and secure proper uniforms for the patrol). The wily enemy in Korea caused the friendly patrol to prepare for the operation in even more detail than suggested by the book. Figure 1 shows a soldier as the commanders saw him at the patrol rehearsal, and as the enemy saw him —or perhaps didn't see him—in combat.

OPERATION ORDER

The standard operation order then in effect was conformed to closely by patrol leaders in Korea. Farsighted, conscientious individuals even retained the order card[3] issued to students, and used it as a guide. In general, here is what a patrol operation order covered:

1. General.

Contained enemy locations, activities and strength. Also included the patrol's locations, planned actions, available fire support, and the mission and routes of other patrols.

In the late stages of the conflict, extensive enemy information was available. The basically unchanging situation, and the knowledge gained by troops crawling over the same plot of ground many times, simplified sections of the order. Even with this added information, though, empty bunkers were sometimes destroyed and many a fire fight occurred between friendly patrols.

2. Mission.

Get there . . . get it . . . get back!

In addition to this simple directive, one theater requirement wormed its way into every patrol's mission—the capture of prisoners. The reason: prisoners, properly interrogated, provide useful intelligence. Therefore, regardless of a patrol's mission—security, reconnaissance or combat—every effort to capture prisoners[4] was made. If the patrol failed in its basic mission, but brought back prisoners, the pain was somewhat eased.

Departure and return times were set by the battalion commander.

3. Routes.

The general route to be followed by the patrol was decided by the battalion commander. Except when the commander set an exact route for reasons of security or reconnaissance, the patrol leader tentatively chose his own course. He met unforeseen situations with on-the-spot changes.

4. Formations.

The diamond and column formations were designated in the patrol order and used in combat. At night, either the single file or column formation was used to retain control. Security was maintained by advance and rear security units, with individuals being controlled by visual contact. A lost man rarely returned to friendly lines safely. A man didn't dare stray, so he stuck to his unit like glue—glue that helped keep him in one piece.

5. Plan of attack.

Each man's specific duty was outlined in the patrol leader's order, except for platoon or larger sized units. When bigger patrols were needed, key men received instruction on their detailed actions and performed them in rehearsal as the rest of the patrol observed. A tightly knit team was evolved, but like most modern units, it had interchangeable parts.

Enemy contact, the book warns, is to be avoided unless the mission demands it, or unless it is absolutely necessary to prevent capture or death. The patrol order stipulated what was to be done in the event of unexpected contact. In Korea, the exception to this doctrine once again concerned prisoners. Contact would not be avoided if there was a possibility that a prisoner could be captured. Rehearsal (of actions to be taken in the event of enemy contact) paid off in Korea where fire fights frequently took place at night at ranges of 5 to 50 yards.

[3]The author refers to patrol order cards issued to students at The Infantry School.

[4]Assigning a reconnaissance patrol the mission of capturing prisoners is inconsistent with the teaching of The Infantry School. The Infantry School teaches that a reconnaissance patrol should not be given the mission of capturing prisoners.

The first few seconds of fighting proved to be no time for a patrol leader to decide on what he had to do.

"The location of the initial patrol rallying point is usually within friendly lines and close to the point in friendly lines from which the patrol leaves to begin its operation," says the book. Here field practice departed from book doctrine. Patrols found it difficult to understand the purpose of rallying points, how and when they were to be designated, and the proper actions to be taken when a rallying point was used. Some patrol leaders failed to give their men a rallying point. These patrols, when dispersed or beyond control of their leader, often reassembled at the platoon or company CP without completing their mission.

The book tells us that after arriving at the rallying point, patrols are reorganized by the senior member, and assume positions for all-around security. They wait a reasonable time for the remainder of the patrol to reassemble, and then continue with the original mission. In the field, however, reorganization at the rallying point did not always mean the mission would be continued. Often this action was replaced by dispatching search parties to look for lost men. The life of one of our own men was even more important than the capture of an enemy prisoner.

Patrols knew exactly what to do when they arrived at their objective—for they had rehearsed each move several times. Security groups were, usually, at least half as big as the reconnaissance or assault group. Often they were both about the same size. On recon and security patrols, the security unit would follow to the rear, ready to protect the lead unit from an ambush. For combat patrols, the support led off—taking a position to cover the assault group as it approached the objective. Once again, book and field agreed on tactics.

6. Administration.

Most of the administrative matters were handled by commanders on a higher level than the patrol leader. However, some of the differences between book doctrine and field practice merit inclusion at this point.

Casualties, instead of being hidden and brought back on the return of the entire patrol, were frequently returned immediately to friendly lines by the patrol members. If battalion felt too many casualties were incurred prior to reaching the objective, the patrol was directed to return. The same handling was accorded to captured enemy prisoners: they were sent back to friendly lines as quickly as possible.

7. Command and signal.

Communications organization followed closely the suggestions made by the book. Arm-and-hand signals, oral commands, touch, radio and pyrotechnics were all used in Korea as the situation required.

Spare radios were carried, and close coordination was maintained between the patrol and headquarters. Wire was used with caution because it was expensive. Then too, safe lanes through minefields often became so covered with communication wire[5] that the enemy had no trouble following the patrol routes and setting up ambushes. For this reason, and for reasons of economy, every effort was made to bring in and re-use wire.

[5]See "Wire Dispenser Refill Kit," *The Infantry School Quarterly*, April 1955.

Patrols reported to headquarters on a strict time schedule. Upon reaching designated check points, they would code messages telling of enemy action, casualties, capture of prisoners and distance to objective.

Communication with headquarters was vital to the patrol. Two communications items were especially important: AN/PRC 6 and AN/PRC 10 radios, and the field wire equipment, specifically the reel. The radios were far superior to their predecessors in weight, bulk, range, dependability and concealability.

Radio men were prime targets and expedient action was taken to conceal the radio equipment, making them less conspicuous. The radio was carried on the back, antenna downward, with a poncho or overlarge raincoat over the equipment, or on a packboard, where it wasn't overly obvious except on bright nights. Reel equipment was well oiled to prevent squeaking by the reel axle.

Thus the patrol order was completed —allowing for few surprise actions. Everything was carefully prepared and refined. Each man's fate was largely determined by the teachings gleaned from the book's doctrines, the bullets of the enemy he had to out-think and the experience passed on by men who had fought and lived.

* * * * *

The patrol left the dismal quiet in front of its lines, entered "No Man's Land," and . . . .

Figure 2. Soldier set for night patrol. ♦

tips for new . . .

Lt Richard E. Ekstract

THE largest percentage of officers entering the army today are ROTC graduates. Unlike officer candidates or United State Military Academy cadets, the ROTC cadet takes his training in a civilian atmosphere. As a consequence, it's only natural that the newly commissioned ROTC graduate will be faced with many problems during his first few weeks in the army.

In order to assist the new lieutenant (and his future commander) we interviewed a number of recent ROTC graduates. What follows is an attempt to answer the questions most frequently asked.

Reporting

Q. Where do I report?

A. Here at The Infantry School, incoming officers report to The Infantry Center Annex, located near the entrance to the Main Post. Most service schools display a sign reading "Incoming Personnel Report Here" —you can't miss it. If you're assigned to a unit, report to headquarters, ask for the adjutant or his assistant and follow his instructions. Of course, the military police will be glad to direct you if you lose your bearings.

Report early (between 0900 and 1100) in order to have time to get oriented and settled down. Wear the prescribed uniform. At Fort Benning, the winter uniform is normally worn between November and the middle of April, the summer uniform from mid-April through October. Be prepared to leave a copy of your orders when you sign in.

Pay

Q. How much pay will I receive each month after taxes are deducted?

A. As a second lieutenant without prior service and only one dependent

Facts that can save you money . . . time . . . worry.

ROTC graduates

(you), you will receive $240.00 per month after taxes (if adequate quarters are furnished). If you are married and declare two dependents, you will receive an $85.00 rental allowance and a $10.00 tax reduction. This adds up to $335.00 per month after taxes.

All student officers attending The Infantry School on TDY orders receive per diem pay at the rate of $1.65 a day.

Q. Should I have a checking account?

A. Students attending the Basic Course at Fort Benning have encountered some difficulty in reaching post banks during duty hours. To prevent such inconvenience and to save time, you would do well to request the local post finance office to send your government check to a local or home town bank for deposit to your checking account.

Q. How much money should I, as a single man, bring with me?

A. You will need some money until you receive your travel pay and clothing allowance. Forty dollars should be sufficient to pay for your meals and take care of whatever incidentals you may need.

(Continued on next page)

IT'S a big step from a civilian college campus to an army drill field. In this article, **LT RICHARD E. EKSTRACT** (ROTC, Temple University, 1953) offers several suggestions to help the new ROTC graduate overcome that initial feeling of "newness."

Lt Ekstract is a graduate of the Basic Course, TIS, and is currently assigned as Executive Editor of *The Infantry School Quarterly*.

Clothing

Q. What military clothing should I bring with me?

A. It's best to have most of your military clothing before you report. However, many newly commissioned officers have only a limited amount to spend before being issued their uniform allowance. The summer uniform required for reporting at Fort Benning consists of:

Shirt, trousers and cap: cotton khaki (shade 1).
Necktie: shade 51.
Belt: web, waist, with buckle.
Socks: plain brown, tan or OD.
Shoes: low quarters, plain brown or tan.

The winter uniform is identical except for the poplin shirt and wool OD jacket, trousers and cap.

Officers attending the Basic Infantry Officer Course at Fort Benning will wear the fatigue jacket and trousers, blocked field cap and combat boots most of the time. Field equipment—helmet and helmet liner, field pack, cartridge belt, first aid pack, canteen, etc.—is issued to students by their student company.

THERE WILL BE . . .

Q. When do I get my uniform allowance and travel pay?

A. If you remain in the army over 90 days, and are not Regular Army, you'll receive a $300.00 uniform allowance as soon as the necessary forms are processed—usually within two weeks after you report. Those who remain on duty less than 90 days receive $200.00. Within two weeks, you should receive travel pay (6¢ per mile) from your home to your new post (if you pay for your own transportation). However, the nearest army transportation office can provide you with a train or airline ticket to your new post. In that case, you'll be paid per diem at the basic rate of $9.00 for every day of travel. The army also pays for transporting your dependents unless you are only assigned for temporary duty. (Officers assigned to the Basic Infantry Officer Course at Fort Benning are on a TDY basis.)

Q. What will I need for my basic military wardrobe?

A. That depends on your tastes and your pocketbook. But here is a suggested minimum wardrobe for the ROTC graduate planning to remain two years on active duty. (T/A 21, changes 1, 2 and 3, specifies minimum uniform requirements for officers.)

MANY PROBLEMS . . .

1. One dress uniform, winter (Pinks and Greens).
2. One dress uniform, summer (tropical worsted or gabardine, shade 61), with two each shirts, trousers and caps.
3. Five suits of cotton khakis, with three caps (you may need more).
4. Two complete shade 33 uniforms, with two caps (OD's).
5. Two pair of combat or paratrooper boots.
6. Five sets of cotton fatigue uniforms and two blocked field caps with stiffeners.
7. Overcoat, new style (taupe, shade 79).
8. Raincoat.
9. Field jacket.
10. Footlocker or a trunk which you can lock.
11. Miscellaneous items: four poplin shirts; two neckties, shade 51; eight pair of plain brown, tan or OD cotton socks; eight pair of OD wool socks; two sets of insignia; one pair of gloves with wool inserts; three belts; two pair of low quarter shoes (one QM, one plain, smooth calf); and towels.

Q. How much will all this cost me?

A. That depends on whether you buy from Quartermaster or at civilian stores. Brand-name uniforms, bought at a reputable store and tailored to fit, are better looking—and in the army, your appearance really counts. Quartermaster uniforms are less expensive, but may require alterations. You will want to balance these factors of cost and appearance very carefully: extravagance is silly, and so are economies that might hurt your army career.

Here's a list of current prices (as of 1 January 1955) charged by the Quartermaster Sales Stores at Fort Benning:

Shirt, cotton khaki	$ 2.90
Trousers, cotton khaki	3.30
Garrison cap, cotton khaki	.35
Tropical worsted uniform:	
Blouse	16.20
Trousers	8.50
Shirt	5.80
Socks, cotton	.30 pr.
Undershirts, cotton	.40
Undershorts, cotton	.45
Raincoat	5.55
Gloves, leather shell	1.85 pr.
Glove, inserts	.75 pr.
Belt, web, waist	.25

DURING THOSE . . .

Buckle, brass	.10
Garrison cap, tropical worsted	1.00
Poplin shirt (for wear under blouse)	2.00
Jacket, wool, OD	15.00
Trousers, wool OD	8.60
Garrison cap, wool, OD	1.05
Service cap, winter, felt	4.50
Pink trousers (shade 54)	11.35
Green blouse (shade 57)	22.00
Overcoat, taupe (shade 79)	40.00
Low quarter shoes	5.00
Combat boots	7.40
Fatigue jacket	2.25
Fatigue trousers	2.40
Field coat (shade 107, with removable lining)	25.00
Field jacket	10.90
Field jacket liner	8.75
Socks, wool	.55 pr.
Fatigue cap (without stiffener)	.50
2d Lt's bars	.40 pr.
Insignia, US	.30 ea.
Insignia, crossed rifles	.30 ea.

Upon receipt of orders—you can buy a starter set (two sets of fatigues with caps, one set of OD's or khakis with caps, boots, low quarter shoes, socks, belts and insignia), at any nearby QM store for similar prices. Just show them a copy of your orders.

Q. Are officers permitted to wear cloth insignia (crossed rifles and rank)?

A. At Fort Benning and in most units, cloth insignia may be worn on the collar and cap of the fatigue uniform. Brass insignia is easily scratched during field work, which renders it unfit for wear during inspections.

Q. Should I bring my civilian clothing?

A. Of course. Civilian clothes are authorized for wear during off-duty hours. Besides, if you've been wearing a uniform all day—it's relaxing to change to looser fitting civilian clothing. But don't overload: take only what you think you'll need.

Buying Tips

Q. Can you give me any tips on buying uniforms?

A. Here are a few hints for the new second lieutenant who wants to look smart, yet save money.

Buy one pair each of combat and paratrooper boots: the cheaper combat boots for roughing it in the field, the "jump" boots for parade. A pair

FIRST FEW WEEKS

of Quartermaster low quarters will do for ordinary wear, but you'll want another pair of better quality, smooth calf or scotch grain, for dressing up.

You may be wise to buy your everyday OD's at the QM store and

one "special" set at a civilian store. Remember, OD's are tentatively scheduled to be replaced by "Army Green" on 1 September 1956, although OD's will continue to be worn until September 1960. (You may be able to get low prices from civilian dealers who will be closing out their OD stocks.)

Buy belts, ties, shirts and woolen socks at the QM store—you get the same clothing at lower prices. Khakis are cheaply and easily tailored, so buy them from the QM stores, too. Choose khaki caps a size too large—they shrink!

Be sure to check for matching colors. The hue of tropical worsteds and shade 33's sometimes varies from dealer to dealer. And speaking of colors—have your new fatigues washed and starched once or twice to fade them before wearing. This will help you to overcome that "brand new" look. Beware of shrinkage with fatigues, too.

Automobiles

Q. Should I take my car?

A. A car is always a convenience in the army, both for getting around post and for off-post weekends. If your car is in good condition and adequately insured, by all means bring it.

Because of the chance of overseas assignment, many officers prefer not to buy a car until they complete their basic course. You can usually find a fellow student who will share his car if you will share expenses. And at most army stations, you will find laundry and shopping facilities right on post.

Q. How do I register my car?

A. At Fort Benning, officers must register their cars at the Provost Marshal's office within 72 hours after arrival. The owner must produce proof of a minimum coverage of $5,000 to $10,000 property damage and $5,000 personal liability. Don't forget to bring your state driver's license and certificate of title.

If you plan to drive your car on a military post, be sure to adhere strictly to all traffic regulations! These regulations are stringently enforced, and violators may easily lose their driving privileges.

Quarters

Q. Now about quarters—what kind of housing can I expect?

A. Unmarried officers, or those who do not bring dependents with them, live in bachelor officers' quarters. At Fort Benning and most army posts, these provide each officer with his own bedroom and study, plus bedding and a minimum of furniture. A small fee is charged for washing linen and maid service.

Married officers with TDY orders may bring their families. To obtain family housing, contact the Personal Service Division of the Adjutant General Section at your new post.

At Fort Benning, a letter indicating the off-post housing situation is mailed to incoming officers shortly after it is known that they are to arrive. If you are assigned to Fort Benning, you may write the Billeting Office, The Infantry Center, Fort Benning, Georgia, for more specific information.

The Billeting Office *does not locate* or *rent* housing. It is an in-

formation agency which can provide you with the names of rental agencies and lists of available off-post housing.

Q. What about shipping household furnishings?

A. The government will ship up to 600 lbs. of household goods on TDY orders. Just write the transportation office of your assigned post—or any nearby army transportation office for the necessary forms. Send these forms and six copies of your orders to the transportation office of the army installation nearest your home (preferably the headquarters of your army area). Depending on the distance, you should allow one to two months for your household goods to reach your assigned post.

Official Calls

Q. Will I be expected to make official calls?

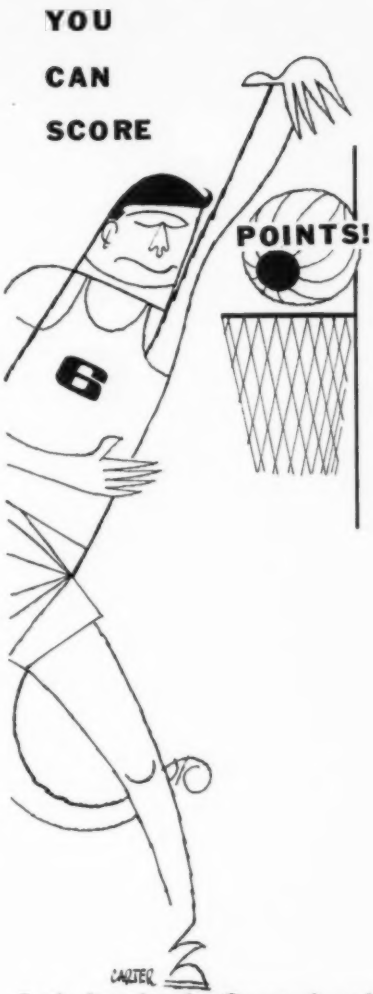
A. As a student, you are not required to call on senior officers. But if you have been assigned to a unit, you will be expected to make official calls. Check with the adjutant for instructions and local policies.

Facilities

Q. What facilities will be available to me?

A. You can expect to become a member of the Officer's Club as soon as you arive at your new post. The membership fee is small, and the club usually offers you golf, swimming and other activities. Medical and dental care will be provided for you and your dependents. Adult dependents may purchase groceries at the post commissary, and there is usually a Quartermaster laundry nearby. Unmarried officers can usually eat quite economically at a consolidated or com-

(Continued on next page)



Let's face it—the Quarterly subscriber is in a different league. His knowledge of the latest in tactics and weapons, training and administration makes him always a high scorer. And our next issue promises to be a champion with such articles as "Soviet Tactics" and "How to Survive an Atomic Blast." So join the winning team—subscribe today!

pany mess—lunch and dinner should average about 80¢, breakfast even less. Post exchanges offer a wide variety of wares at low prices. Motion picture theaters and recreational facilities are found on every army post, and you'll enjoy the many sport programs, whether you prefer to play or just to watch. Of course, religious services are held in post chapels by chaplains of all the major faiths. And if your require the services of the Red Cross, you will usually find a field office nearby.

How to Get Along

Q. Can you give me any general advice?

A. Here are several points you would do well to remember:

1. If you want to receive mail—send your complete mailing address home. Also send your telephone number for use in case of an emergency at home.
2. Always keep your word and have a good reason for everything you do.
3. Never try to bluff or alibi—we all make mistakes.
4. Conduct yourself at all times in a military manner; never forget the everyday military courtesies.
5. The army places a premium on loyalty. You should encourage it in your subordinates and give it to your commanders.
6. You can't afford to be late for anything in the army. If possible, always try to to be early if you have an appointment.
7. Officers of your own rank have the same problems and receive the same pay that you do. Try to choose most of your close friends from this group.
8. People are quick to judge others by their appearance. If you look "sharp" people will tend to have more confidence in you.
9. Never use obscenity or profanity—this will only cheapen you in the eyes of others.
10. Don't tempt fate—keep valuables locked up.
11. Pay your bills on time. (Club and mess bills must be paid by the 10th of each month.)
12. Have your personal affairs in order before you leave.
13. Save copies of important orders that pertain to you. (Bring your shot record with you to avoid having to take *all* of your shots again.)
14. If you're married, give your wife a copy of *The Army Wife*—and see that she reads it.
15. Make use of military information available to you, and keep up to date on the latest changes and developments.

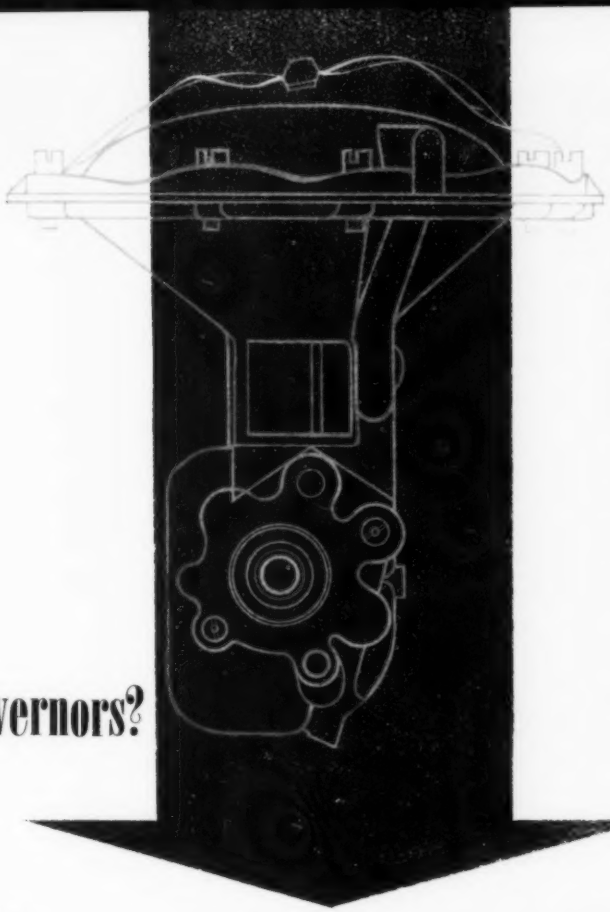
Because of his college training, the ROTC graduate enjoys many advantages in the army. With these advantages goes the responsibility of reporting for duty—prepared. The answers we have provided should help the newly commissioned officer meet his first weeks in the army with poise and confidence . . . confidence that should result in a successful tour of duty.

NO CRYSTAL BALL . . .

But we can predict your future. Renew your subscription to *The Infantry School Quarterly* and you'll be well informed. Remember, the outstanding soldier is the soldier with the facts. And that's what we give you, plus glimpses of future developments that are nothing short of magic! Works like a charm! So cross our palms with silver—1 year $2.50; 2 years $4.75; 3 years $7.00.

hy governors?

an interview with CWO James M. Hanley



SINCE the publication of "Keep 'Em Rolling" (April 1955), we've received a number of inquiries about military vehicles. The one question which recurred more frequently than any other was, "Why are governors used on military vehicles?" Since many readers feel that governors are unnecessary and believe, erroneously, that they are used only to keep drivers from exceeding a prescribed local speed limit, we felt it well to cast some light on the subject. As a result, we asked CWO Hanley, an automotive expert, to give us the facts about governors.—Editor.

Q. What is a governor?

A. A governor is a regulating device. (Picture appears above.) It is mounted between an engine's intake manifold and carburetor. I'd like to add, right here, that its

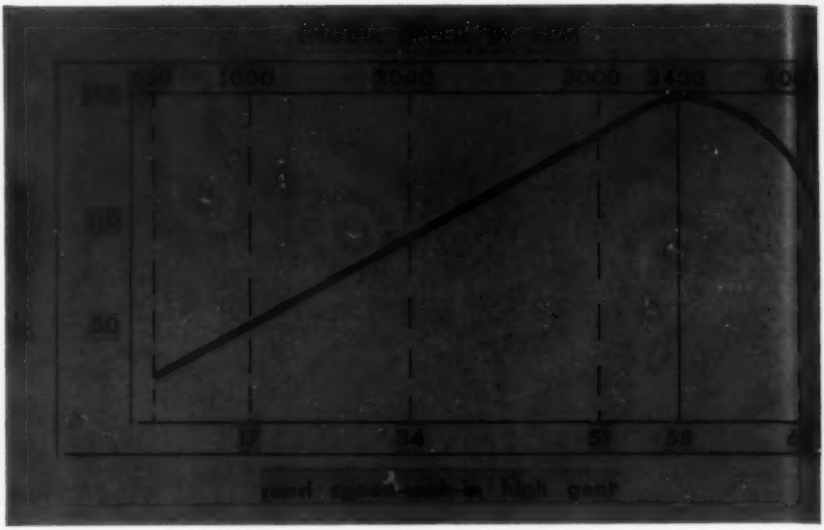


Figure 1

purpose is not to prevent drivers from exceeding local speed limits. You see, every engine is designed to develop its maximum horsepower at a definite speed. The speed at which this maximum is reached depends entirely on the purpose of each particular engine. The governor prevents the vehicle from going beyond this speed for reasons of economy. Safety is a consideration, but is not the basic reason.

Q. We understand that some commanders have readjusted governors to prevent drivers from exceeding local speed limits. What do you think of this practice?

A. It's false economy. This practice prevents a driver from getting maximum performance from his engine. If a driver can't stay within local speed limits, he shouldn't be driving. The governor—ordnance set—that is not tampered with will increase the life of an engine materially. As shop officer of a direct Ordnance support company, I observed that 75% of the engines that were replaced in 2½ ton trucks because of bearing failure broke down because a governor had been removed or tampered with until it ceased to function.

Q. Are governors found only on military vehicles?

A. No. People don't seem to realize that governors are used on many other vehicles not owned by the army. Some of the better known users are commercial bus lines, fire trucks, commercial truck lines, big semi-trucks and all heavy construction equipment (such as road graders and bull dozers). These commercial outfits want to get maximum performance from their vehicle engines.

Q. Would you define maximum performance and illustrate it for us?

A. It's the engine speed at which maximum horsepower is obtained. As an example, let's look at a speed graph of the 2½ ton truck (see Figure 1). Its engine is designed to generate 145 horsepower at an engine speed of 3400 revolutions per minute, or a road speed of 58 miles per hour. The

horsepower of this truck will increase with engine speed until it reaches 3400 RPMs. If you exceed this engine speed there will be a sharp drop in power, despite the fact that the truck will travel at a higher road speed. (See Figure 1.)

Q. What causes the drop in horsepower?

A. It is caused by a loss in volumetric efficiency. This means that, at this increased speed, the valves open and close so fast that there just isn't time for enough fuel and air to get into the cylinders. Then, too, there isn't enough time for all of the exhaust gases to get out.

Q. Is this loss in power the primary reason for the installation of governors on military trucks and other large vehicles?

A. Not entirely, though it is reason enough to justify the use of governors. The real reason is engine wear. Engine wear doesn't rise in direct proportion to engine speed. Take the GMC engine for example: if it is operated at a speed of 4400 RPMs (or 75 miles per hour in high gear), which is 1000 RPMs faster than its maximum power speed, both the amount of wear and bearing loads are increased many times.

Q. What happens when this engine is not allowed to generate 3400 RPMs (58 mph) by the governor?

A. It operates at a loss. You cannot get the benefit of its maximum power.

Q. Does a governor reduce the load a vehicle can carry?

A. No. A properly governed vehicle can haul loads of the same weight as an ungoverned one and will be hauling these loads long after its ungoverned twin has been relegated to a junk yard. This is the real reason that governors are used on both military and commercial trucks.

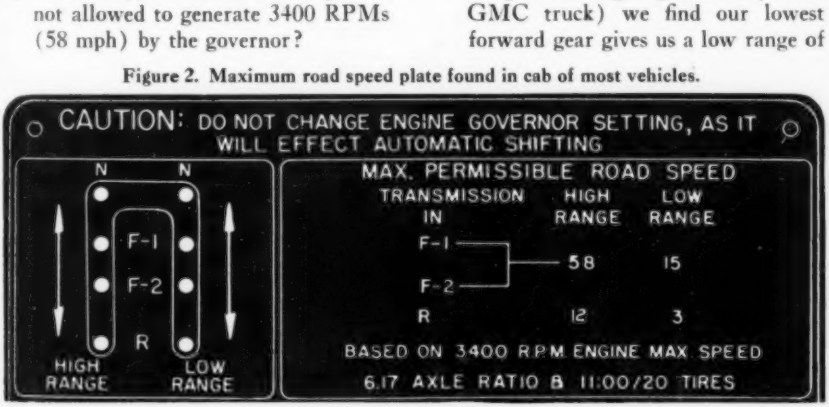
Q. Many readers ask why the ¼ ton truck and their private vehicles are not equipped with governors.

A. The family car and the ¼ ton truck have one thing in common—both carry light loads. For this reason they are usually operated in high gear. They are manufactured so their maximum speed restricts the RPMs to a safe and economical range for the engine. As a result, no governor is needed.

Q. How can governors be checked to see if they are properly set?

A. First see if the governor seals are intact and are not the victims of tampering. Next look at the road-speed caution plate found on the dash board of military vehicles (see Figure 2). Now select the lowest range and lowest gear. Using Figure 2 (2½ ton GMC truck) we find our lowest forward gear gives us a low range of

Figure 2. Maximum road speed plate found in cab of most vehicles.



15 mph. Run the engine wide open in this range and carefully note the speed indicated on the speedometer. Check this reading against the permissible speed which, in this case, is 15 mph for this range and gear. If you can't reach the maximum permissible speed—the governor is set too low. If you exceed the maximum speed—it is set too high. The necessary adjustments should be made only by a qualified mechanic.

Q. Is there any engine condition a governor cannot control?

A. Yes. When a truck's wheels are driving the engine as in the case of a heavily loaded truck going down a steep grade. The weight of the truck drives the engine at excessive speeds and can ruin an engine in a few minutes. The only protection against this is properly trained and informed drivers . . . but that is another interview.

PROVIDING the answers to readers' queries is one of the major tasks of an editor. In this article, we've gotten a big assist from CWO JAMES M. HANLEY, who offers some little-known facts about an often misunderstood subject.

Mr. Hanley served in Korea as Shop Officer of the 21st D. S. Ordnance Company. He is presently assigned as Chief, Advance Engine Committee, Automotive Department, TIS.

A Class E training film, "Why Engines are Governed" (5 minutes) has just been released and is available through training film libraries.—Editor.

STAR UNIT . . .

the 12th Infantry

IN 1798, the 12th Infantry Regiment formed its partnership with history.

Sixteen years later—in 1814—the regiment manned the breastworks outside Fort McHenry, Baltimore. For 25 hours, they withstood a furious bombardment. Four thousand British charged at midnight and at dawn. Rising from their trenches, the 12th drove the enemy to their ships. Watching by the light of bomb and rocket, Francis Scott Key composed memorable phrases: "Oh say, can you see . . ."

Three times, the 12th helped decide American history. At Gettysburg, the regiment raced Lee's Confederates up Round Top, the anchor of the Union line, and drove them from it. At Mortain, in 1944, when four Panzer divisions struck at the vital Avranches corridor, the 12th—exhausted after weeks of fighting—carried the attack to the enemy for four successive days and saved the American line. In Luxembourg, the 12th checked the German drive southward in the Battle of the Bulge. With six companies cut off, with enemy battalions infiltrating four kilometers behind its lines, fighting with cooks and orderlies and MP's, the 12th turned back a German division and broke its strength in half.

Twenty-four streamers decorate the colors of the 12th Infantry. They represent the fiercest battles of the Mexican and Civil Wars, five major Indian campaigns, victories in Cuba and the Philippines and outstanding heroism from Normandy to Bavaria. They represent the regiment's history—and America's.

We take pride in saluting the 12th Infantry Regiment for being a 100 per cent subscriber to *The Infantry School Quarterly*. Colonel Kenneth W. Collins, now commanding the 12th at Gelnhausen, Germany, writes: "We find the *Quarterly* of tremendous value, not only as a source of current thinking but as a source of new ideas."

In each issue, we salute an outstanding unit which has subscribed 100 per cent to *The Infantry School Quarterly*. Watch for the next "Star Unit."

TANK POWER

Capt William B. Wier

Leonardo Da Vinci designed a "tank." He also envisioned a weapon capable of destroying it. But they were, understandably, a long way from today's tanks and their newest nemesis . . . the 106mm recoilless rifle.

The first tanks rumbled into battle at the Somme River in 1916. The slow, thinly armored mastodons crushed the belts of barbed wire, smashed enemy machine gun nests and cleared a path for the infantry. The conduct of ground warfare had to be changed.

This use of tanks in World War I was narrow, restricted. The period between World Wars I and II allowed designers to make vast improvements in mechanical design and their improvements were matched by the tacticians. During World War II, the tank became one of the most decisive weapons in ground combat.

A Problem of Survival

The monster had been created, and the infantry, in order to survive on the battlefield, had to destroy it. A seesaw battle for superiority between gun and armor developed. Hardened armor plate, increased armor thickness and sloped and spaced armor were met head on by high velocity hardened steel projectiles, shaped charges, plastic projectiles and high caliber weapons.

The Infantry's survival depended on an anti-tank weapon having:

1. An effective range equalling that of a tank's cannon.

2. Sufficient accuracy to hit with either the first or second round.

3. A projectile powerful enough to smash a tank with a single hit.

4. Cross country mobility approximating that of a tank.

Thus, our anti-tank weapon had to be of large caliber, yet light enough to be carried by hand and capable of being mounted on a small, inexpensive vehicle. The 106mm recoilless rifle is the only present-day weapon which meets all of these requirements.

Development of the Recoilless Rifle

Recoilless rifles are not a new idea. Attempts to eliminate recoil date back to the first cannons built. Da Vinci tried to fire two joined cannons simultaneously, the tubes pointing in opposite directions. In 1918, the US Navy tested a gun which fired shot and cosmoline to the rear and a projectile to the front. The Germans designed a gun which was, essentially, an open tube. It fired a 100 kilogram projectile and threw a 100 kilogram cartridge case to the rear.

The first successful recoilless weapon was made by the Russians who employed it against the Finns in 1940. Operating on the same "escapage of gas" principle that we use today, the rifle had holes machined through the breechblock which allowed a specific amount of propellant gases to escape to the rear. The remaining gases, acting inside the reaction chamber, exerted thrusts on the front and rear walls of the chamber. The thrusts were equal in force and opposite in direction. At last there was a weapon which eliminated all recoil in firing. What's more, the overall weight of this recoilless rifle was greatly reduced since it did not require heavy recoil absorbing mechanisms or thick tube and chamber walls.

The US Army intensified development of recoilless weapons during World War II. Newly developed 57mm and 75mm rifles were placed in the hands of selected test units of the 17th Airborne Division in Europe and units fighting in Okinawa in 1945. Favorable comments from these test units stressed the direct-fire accuracy and effectiveness of these weapons in destroying emplacements, bunkers and crew served weapons.

These rifles did have a shortcoming—their shaped charge rounds could only penetrate 3 or 4 inches of vertical or near vertical armor. This was primarily because the recoilless ammunition was stabilized in flight by rotation. The rotation imparted a considerable centrifugal force to the projectile. The result was a scattering of the explosive jet of the shaped charge filler which caused approximately 70% loss of the charge's penetrating power. It soon became obvious that neither the 57mm nor the 75mm was the answer to our anti-tank needs.

Wanted: A Better Anti-Tank Weapon

The need for a larger caliber weapon firing a more effective round resulted in the addition of the 105mm rifle, M-27, to the TO&E of the heavy weapons company in 1953. This weapon was designed to furnish anti-tank protection to the Infantry battalion and, secondarily, to furnish direct fire support to rifle units. The M-27 did destroy tanks, but as Chart 1 indicates—it had the serious limitations of poor mobility, excessive weight and limited armor defeating power.

Late in 1953, the 105mm rifle was placed on the shelf as sub-standard. Its new replacement is the 106mm recoilless

---

CAPT WILLIAM B. WIER'S interest in recoilless weapons began in Korea. Upon graduation from the Advanced Course, TIS—he was assigned to the Recoilless Weapons Committee, Weapons Department, TIS. In this capacity he closely followed the 106mm recoilless rifle through its testing phase. The author, a 1945 graduate of the USMA, is now with the US Military Commission in Brazil.

	105 mm	106 mm
RANGE		
MAXIMUM	9,300 yds.	8,400 yds.
MAXIMUM EFFECTIVE		
Moving Targets	1,000 yds.	1,300 yds.
Stationary Targets	1,500 yds.	1,500 yds.
MUZZLE VELOCITY	1,265 f.p.s.	1,650 f.p.s.
TRAJECTORY	Slightly curved	Flat
WEIGHT	700 lbs.	472 lbs.
AMMO WEIGHT	47 lbs.	34 lbs.
TOTAL VEHICLE LOAD (RIFLE, 4 ROUNDS, 3 MEN)	1,500 lbs.	1,200 lbs.
COST	$7,800 –$2,100 for jeep	$8,800* –$2,100 for jeep *To be reduced by mass production.

Chart 1. Comparison between 105mm and 106mm recoilless rifles.

rifle, M-40. A comparison of the vital statistics of the 105mm and 106mm shows that the four requirements of range, accuracy, armor defeating power and mobility have been met by the 106mm.

The 106mm rifle has proved itself to be the better weapon in every respect. Two special "extras" are outstanding features of the 106mm:

1. It has a flat trajectory within the anti-tank range . . . increasing the probability of a first round hit.

2. Its specially designed ammunition is far superior.

The 106mm is no larger than the 105mm—both tube and round are still 105mm in diameter—but it is considerably more powerful.*

The 105mm projectile (HEAT round) will penetrate five inches of armor plate. While the types and characteristics of 106mm ammunition are classified information, it is safe to say that the 106's projectiles can defeat the armor of any known tank.

Mobility

It is in the fourth consideration—*mobility* — that the 106mm rifle has gained most noticeably over the 105mm. Not only is the 106mm more than 200 pounds lighter, but it has been constructed for easier carrying and greater mobility. It mounts a tripod which can be clamped on the body of a jeep or placed on the ground. The two rear legs have carrying handles, while the front leg ends in a small wheel. On level ground, one man can move the weapon short distances by pushing it like a wheelbarrow. The three man crew can move it along trails or over fairly level terrain for considerable distances.

*The new recoilless rifle is called 106mm to avoid confusion in ammunition, since the rounds are not interchangeable between the two weapons.

The tube is detachable from the tripod. When separated, they form two loads of approximately 280 and 200 pounds. This permits the crew to move the weapon into any firing position. The lighter ammunition makes resupply by hand carry more feasible.

The 106mm is assigned to the heavy weapons company. This gives a battalion six weapons (2 each in 3 sections) at a cost of $8,000 per weapon. A rather small price to pay for protection against a $200,000 tank!

Other 106mm anti-tank units could be created at higher levels. At regimental level, a company consisting of 18 of these rifles would allow the regiment to reinforce units threatened by enemy armor. These added weapons would also serve as an anti-tank system of great strength and depth.

The recoilless rifle, however, is not intended as a tank replacement. It cannot engage in the bold aggressive tactics typical of successful tank operations. At present, it has neither the armor protection nor the shock action of a tank. Its greatest assets are firepower, mobility, flexibility of mounts and cheapness and rapidity of manufacture.

The need for the tank half of the Infantry-tank team continues . . . but it has an ally. The 106mm fights enemy tanks, freeing friendly tanks for offensive missions.

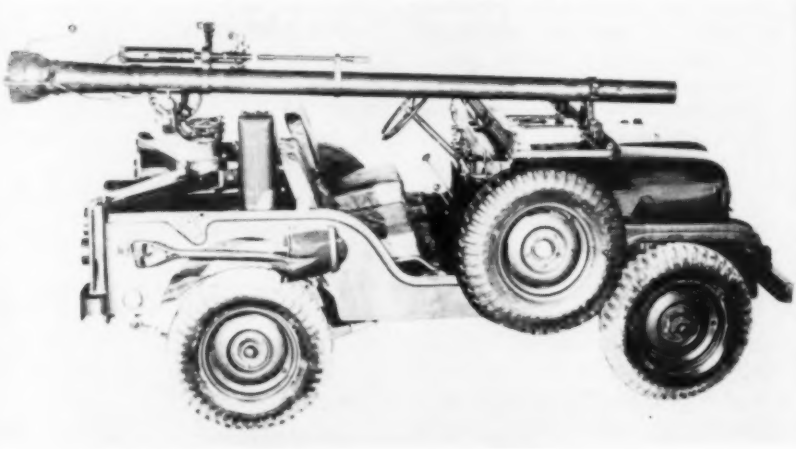
Is the 106mm the Ultimate in Anti-Tank Protection?

The 106mm meets the need for a powerful armor destroyer, but certain modifications can be expected. Some of the improvements that could make the weapon even more effective include:

1. A better carrier (e.g., a lightly armored, fully tracked vehicle).
2. A lighter weapon, manufactured from lightweight metals.
3. Breakdown of the weapon into 100 pound loads.
4. Improved ammunition with more powerful projectiles and more efficient expenditure of propellant powder (for reduced back blast).

Such improvements are for the future. For today, we know the 106mm gunner can destroy any of the modern mechanical mastodons, for his rifle gives him power . . . Power Plus.

106mm recoilless rifle in place on jeep.



how would YOU do it?

Read the situation, study the maps and see if you come up with Major Pinson's solution.

GENERAL SITUATION

On 4 February, the enemy launched large scale attacks using his atomic capability against NATO forces in Europe. A large scale enemy mechanized exploitation force is currently moving south in regimental-size columns. This force, intelligence reveals, has the mission of seizing crossings over the INN River (off map) which is approximately 15 miles south of—and parallel to—the ROTT River. This force is expected to reach the ROTT River on 10 February at about 1700.

The enemy has air superiority. (Close air support for friendly forces has been available only when critically needed.)

The weather is now overcast and there are periodic showers. No change is forecast for the next four days. Heavy rains during the past week made the ROTT and GRASSENSEER Rivers unfordable (they reached flood stage). Bridges across both rivers have been destroyed. The forest (coniferous) in the area is dense. The road net is limited. Cross-country movement by vehicles and tanks is difficult because of steep terrain and mud. The road running through the Grassenseer Valley, between coordinate 483644, AUNDSBERG, WALBURSSKIRCHEN, and TANN, is completely impassable to all vehicles.

The 175th Infantry Regiment has the mission of delaying the enemy north of the INN River in order to provide the time needed for the establishment of a new defense line. Battalion combat teams have been given the mission of delaying the enemy along the principle routes leading into the area.

Major William C. Pinson

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Key to identification of cities:
P - PFARRKIRCHEN
B - BROMBACH
PO - POSTMÜNSTEN
A - ANZENKIRCHEN
TR - TRIFTERN
N - NEUKIRCHEN
G - GODDSHANI
U - UIBERING
W - WALBURSSKIRCHEN
T - TANN
AU - AUNDSBERG

Map A

SPECIAL SITUATION

It is now 090800 February. As Commander, Battalion Combat Team 1, 175th Infantry Regiment, your mission is to organize an initial delaying position by 101700 February (see Map A) and to delay enemy movements along routes one and two.

You have assigned specific tasks to elements of your command. Companies A and B (each with one section of tanks attached) have the mission of delaying the enemy along along routes one and two. Company C, with one platoon of tanks attached, has the mission of establishing an outpost along the ROTT River with one reinforced rifle platoon. One platoon of Company C has been assigned to occupy an outpost in the vicinity of Hill 473 (position two), and prepare positions one and three (see Map A). Your I&R Platoon will patrol east to the contact point, which is three miles east of ANZENKIRCHEN (off map).

By 101500 February, your battalion is carrying out its mission. Enemy action has been negligible.

You have completed a **Night Withdrawal Plan** (Operation Plan 1, Map B, page 88) and a **Daylight Withdrawal Plan** (Operation Plan 2, Map C, page 90) from present position as shown on Map A to Line AA.

11 February. After dark, aggressor succeeds in crossing ROTT River, in the vicinity of PFARRKIRCHEN, with an estimated rifle company. At 112100 February, you order the outpost on the ROTT River to withdraw south of the GRASSENSEER River.

Reports indicate that the enemy is strengthening his forces forward of your battalion position. Several platoon-size attacks have been launched against Companies A and B, but have been repulsed.

About 121400 February, aggressor starts smoking the GRASSENSEER River along the front of Companies A and B. There has also been a significant increase in both direct and indirect fire falling within the battalion area.

It is now 121805 February (two hours before darkness). You receive a message from Lt, I&R Platoon, who is in the vicinity of BURNBACH (off map). The message reads:

"An estimated enemy rifle battalion (reinforced) is south of the ROTT River, moving on foot toward TRIFTERN. The head of the column is at ASSENHAM." (ASSENHAM is approximately 10 miles northeast of TRIFTERN.)

PROBLEM 1.

As Commander, Battalion Combat Team 1, which one of the following courses of action do you take at this time in order to best accomplish your mission? (State why.)

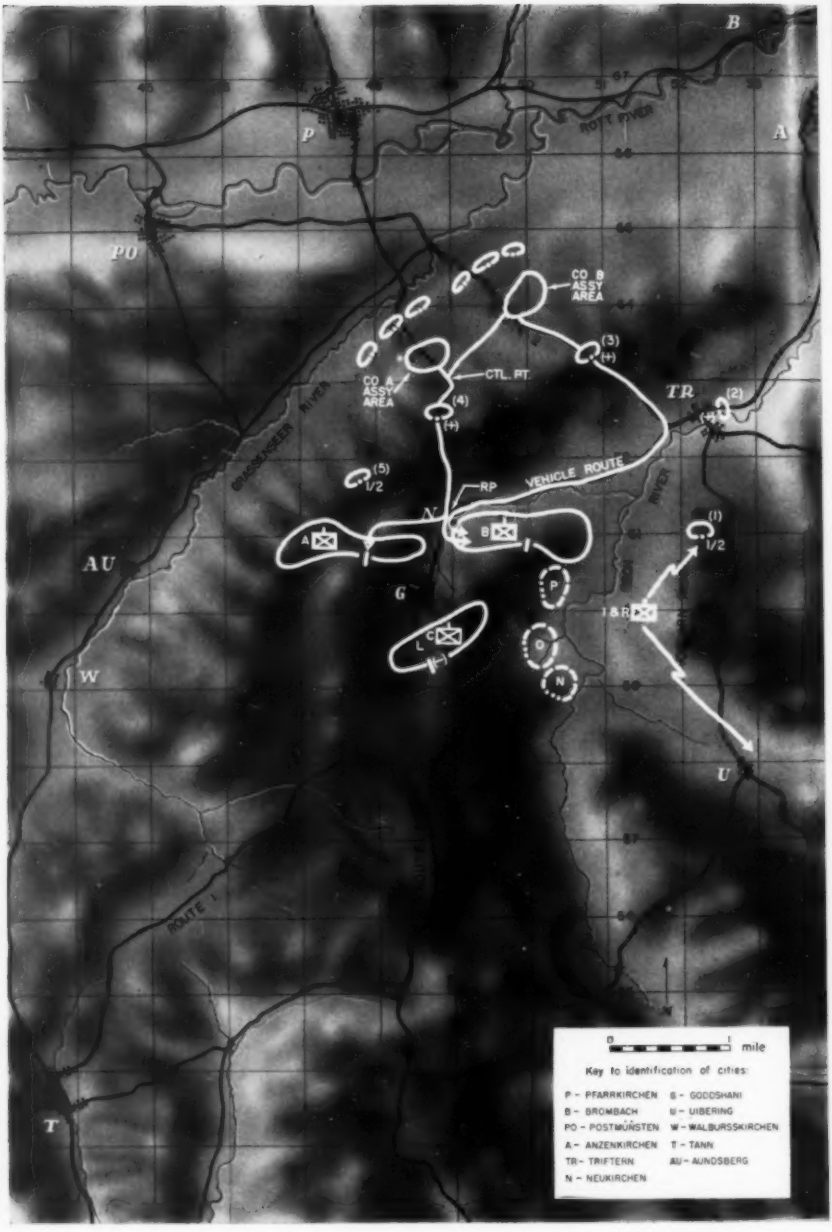
Course of Action A. Withdraw immediately.

Course of Action B. Hold present position until you know more about the enemy situation to your front and east flank.

Course of Action C. Execute a night withdrawal shortly after dark tonight.

PROBLEM 2.

Considering your withdrawal plans on page 89 (Map B, Operation Plan 1) and page 91 (Map C, Operation Plan 2), what orders do you issue to your rifle company commanders to implement your decision? Solution on page 92.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PO - POSTMÜNSTEN
A - ANZENKIRCHEN
TR - TRIFTERN
N - NEUKIRCHEN
G - GODDSHANI
U - UIBERING
W - WALBURSSKIRCHEN
T - TANN
AU - AUNDSBERG

Map B

3. EXECUTION

* a. Co C withdraws at H– 30 minutes over Route 1. Co A and Co B initiate withdrawal at H Hour. Co A and foot elements Co B withdraw over Route 1. Vehicles Co B withdraw over Route 2 to delaying position along Line AA. Equivalent of one reinforced platoon from each front-line company remains as detachments left in contact. Detachments left in contact remain in position to cover withdrawal.

b. Detachments left in contact:

Major Howard, Commanding.
Equivalent one reinforced platoon Co A.
Equivalent one reinforced platoon Co B.
1 Sec 81mm Mort plat.
1 gun from each pair of MG plat.
1 106mm recoilless rifle in each forward company area.
1st Platoon, Co A, 41st Engr C Bn.

(1) Protect withdrawal
(2) Withdraw on battalion order.

c. Co A (—):

Attached: 1st Plat (—), Tk Co.

(1) Withdraw H Hour.
(2) Organize delaying positions along Line AA.
(3) Upon reaching the second delaying position patrol west flank along GRASSENSEER River from ZOGLAU (458615) south to WALBURSSKIRCHEN (412593).

d. Co B (—):

Attached: 2d Sec, 1st Plat, Tk Co

(1) Withdraw H hour, organize delaying positions along Line AA.
(2) Be prepared to organize position P on order.

e. Co. D:

(1) 81mm Mort Plat (—): Withdraw H + 30 min. General support position vicinity 492606.
(2) Antitank Plat: Attach 3d Sec Antitank Plat to Company C. Weapons attached to unit in whose area employed for withdrawal. Attachment ceases upon arrival new delaying position.
(3) MG Plat (—): Weapons attached to unit in whose area employed for withdrawal. Attachment ceases upon arrival new delaying position.
(4) Co (—) withdraw H – 30 min.

* * * * * * *

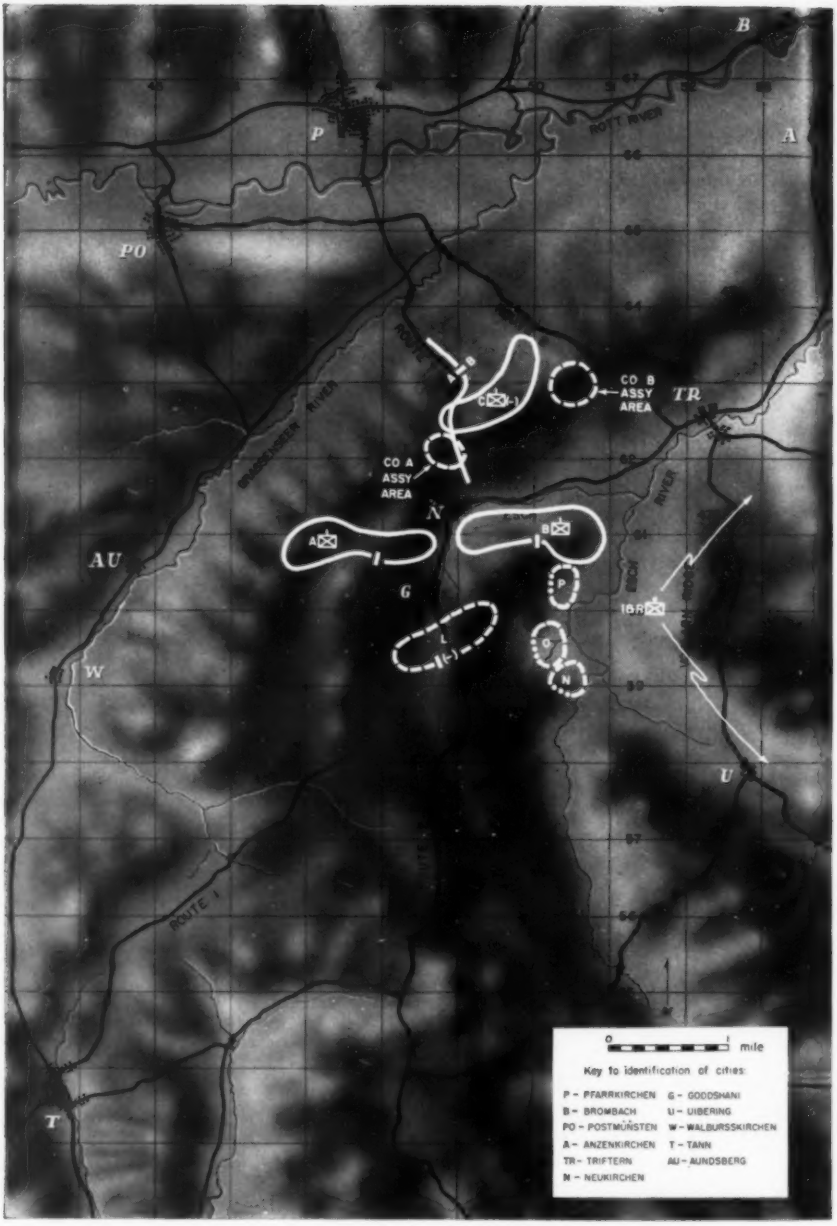
m. Battalion Reserve: Co C:

Attached: 4th Plat, Tk Co.
3d Sec Antitank Plat.

(1) Withdraw H – 30 min.
(2) Prior to H Hour establish outpost line with one rifle platoon plus one rifle squad (reinforced); establish outguards vicinity GSCHAID (478618), Route 1 (488628), Route 2 (505635), TRIFTERN Road (525626), and Hill 475 (523610).
(3) Maintain contact with detachments left in contact.
(4) Upon withdrawal of detachments left in contact maintain surveillance of enemy movement from 1st delaying position to outpost line.
(5) Co (—) organize and occupy position L. Be prepared to organize in priority positions O and N on order.

Operation Plan 1
Night withdrawal to accompany Map B

*Only those portions of the order pertaining to the lettered Cos are shown.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mile
Key to identification of cities:
P – PFARRKIRCHEN
B – BROMBACH
PO – POSTMÜNSTEN
A – ANZENKIRCHEN
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M – NEUKIRCHEN
G – GOODSHANI
U – UIBERING
W – WALBURSSKIRCHEN
T – TANN
AU – AUNDSBERG

Map C

MAJOR WILLIAM C. PINSON presents us with another tactical situation involving the use of atomic weapons. Major Pinson is a graduate of The Command & General Staff College, and is presently assigned as an instructor in the Tactical Department, TIS.

EXECUTION

a. Cos A and B withdrawn in zone beginning H Hour. Co C (reinforced) remains as covering force on position, withdraws on battalion order.

b. Co A:

Attached: 1st Plat (—), Tk Co.

(1) Withdraw beginning H Hour, organize delaying position on Line AA.

(2) Upon reaching second delaying position, patrol west flank along GRASSENSEER River from ZOGLAU (458615) to WALBURSSKIRCHEN (438591).

c. Co B:

Attached: 1st Sec, 1st Plat, Tk Co.

(1) Withdraw beginning H Hour, organize delaying position on Line AA.

(2) Be prepared to organize position P on order.

d. Co D:

(1) 81mm Mort Plat:

(a) Attach 2d Sec to Co C at H + 30 minutes.

(b) 1st Sec withdraw beginning H + 30 minutes to position vic 492606.

(c) Upon withdrawal of covering force, 2d Sec revert to control of parent unit.

(2) Antitank Plat:

(a) Attach 3d Sec Antitank Plat to Co C.

(b) Plat (—) attached to company in whose area employed for withdrawal effective H - 10 minutes; attachment ceases upon arrival new delaying position.

(3) MG Plat:

(a) Attach sections to company in whose area employed for withdrawal effective H - 10 minutes.

(b) Attachment ceases upon arrival new delaying position.

(4) Co (—): withdraw beginning H Hour.

* * * * * * *

l. Battalion Reserve: Co C:

Attached: 3d Sec Antitank Plat.
4th Plat, Tk Co.
2d Sec, 81mm Mort Plat, effective H + 20 minutes.

(1) Cover withdrawal Co A and B.

(2) Execute counterattack plan Able or Baker on order.

(3) Withdraw, organize and occupy position L, on order.

(4) Be prepared to organize in priority positions O and N on order.

* * * * * * *

Operation Plan 2
Daylight withdrawal to accompany Map C

*Only those portions of the order pertaining to the lettered Cos are shown.

SOLUTION

Problem 1. You decide to use Course of Action C. You arrived at this decis for the following reasons:

a. The enemy threat at this time is not critical enough to require an immedi withdrawal during daylight.

b. Maximum secrecy and deception can be obtained by withdrawing under co of darkness.

c. Darkness affords maximum security for the movement of the battalion to t second delaying position. Avoiding enemy air attack during movement is a prima consideration.

d. The major enemy force, moving toward the battalion rear from the east, w be capable of blocking the withdrawal prior to daylight tomorrow.

DISCUSSION (Problem 1)

If, as Commander, Battalion Combat Team 1, you decide to withdraw imme ately—you run the risk of suffering heavy casualties from enemy air and obser indirect fires.

All deception and secrecy would be lost in a daylight withdrawal. The ene would have complete freedom to bridge and cross the GRASSENSEER River i mediately. If you wait until more is known of the situation, you risk being cut from the next delaying position by a major enemy force. Postponement of the decis to withdraw would reduce the time available for preparation of the new posit during hours of darkness. A night withdrawal would undoubtedly be forced by enemy tonight.

It is to your advantage, as Combat Team Commander, to select your own ti of withdrawal . . . rather than wait until the enemy forces this action.

SOLUTION

Problem 2. You issue the following orders to your rifle company commanders:

1. CO, Company A: execute operation plan 1. H-Hour is 122015 Febru (Map B).

2. CO, Company B: execute operation plan 1. H-Hour is 122015 Febru (Map B).

3. CO, Company C: execute operation plan 1. H-Hour is 122015 Febru (Map B).

Occupy outguard positions five, four and three as planned (see Map B). Plato now occupying position on Hill 473 (see Map A) will establish a road block east TRIFTERN and remain in position until ordered to withdraw. One squad of t platoon will prepare outguard position two immediately (to be occupied upon wi drawal of the platoon). Outguard position one will be organized and occupied order (Map B).

DISCUSSION (Problem 2)

You realize that it is desirable to make a minimum number of changes in y operation plan because time is limited. Unnecessary changes would, of course, o result in delay and confusion since all of the company commanders have made th reconnaissance and plans based on your battalion plan. In this situation—there

need for Companies A and B to change their plans. All that is needed is the order d the time necessary to carry it out. The mission for Company C, in addition to oviding the outguards to cover the withdrawal from the front, must include a pro- sion for right flank protection. You believe that the platoon occupying the road block capable of providing protection for the right flank. As long as this unit remains position, outguards two and one are not necessary. When this platoon is finally dered to withdraw, outguard position two must be occupied in order to cover its ithdrawal.

•

Answers . . . to the Quiz

ssible score 100 points, Expert 90-100, Sharpshooter 70-80, Marksman 50-60, Recruit 30-40, and Bolo 0-20. r complete detailed discussion of the answers check the references listed below.

1. c. (Par. 18, FM 23-55.)
2. Fifty-three (TO&E 7-11, w/C3, 1952).
3. Kit, Chemical Agent Detector, M9AII (TO&E 7-17, FM 21-41). Expendable supplies for the detection of blistering agents are detector crayon, detector paint and detector paper.
4. d. (Par. 137, TM 9-819.)
5. The regimental I&R platoon furnishes scout-observers from platoon headquarters and reconnaissance squads to man the regimental observation posts. (Par. 126, FM 7-40.)
6. Ninety-six (FM 57-30, Appendix III, Table III).
7. d. 4000 yards (FT 81-B-5-April 1954, 81-AG-1-April 1954 and 81-AH-1-April 1954).
8. b. (Par. 364, FM 7-20.)

DISCUSSION:

In a perimeter defense, the battalion is disposed in such a manner as to enable it to stop an enemy attack from any direction. This is accomplished by organizing a main line of resistance on a 360° front, with occupation of mutually supporting positions completely around this line. Since the defense is oriented in all directions, it is mandatory that the major portion of the combat elements be employed on the MLR. A reserve, varying in size from a rifle platoon to a rifle company, is positioned within the perimeter behind the MLR. This reserve is located far enough behind the front line troops to avoid coming under fires being directed against the forward elements. However, it remains close enough to be able to support these forward elements by fire from the reserve position. Supporting weapons and service and command elements are positioned in the vicinity of the reserve.

A defense which requires movement of troops to prepared positions in order to meet an attack from any given direction is classified as an all around defense (as opposed to perimeter defense in which all positions are occupied initially).

9. a. See chart, "Power Plus," page 83.
10. The present Class V supply system functions by providing using units an initial supply of ammunition, a means of estimating future requirements and a means for controlling Class V items in short supply. (Par. 143b, FM7-30, 21 April 1954.)

FOR WANT O

GENERAL

Once upon a time, in the land of the Morning Calm, hordes of the Red Dragon came sweeping out of the North.

Intent on conquest and destruction, they drove the inhabitants of the peaceful country toward the sea with fire and sword. It seemed as though they must soon overrun that happy land and subject its people to slavery.

But the rulers of neighboring countries were appalled by the barbarism of the Dragon. Swiftly, they gathered regiments and divisions. Sweating armorers worked far into the night forging their marvellous weapons—thick-plated mechanical monsters, swift chariots and deadly mechanical falcons. Wizards and alchemists devised powerful new explosives to rain upon the enemy from the sky or

Captain Martin Blumenson

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bury in the earth beneath his feet. Soon the warriors of these friendly nations were assembled in one great army. Although the tongues they spoke were many, their purpose was one.

Just as the Dragon thought himself victorious, they struck. For three days the battle raged: the sky was darkened with the wings of falcons, and the earth shook to the thunder of bombards. In the end, through good fighting and a good cause, the Dragon was defeated and withdrew slowly northward, licking his wounds.

His foes gave him no rest, but followed closely, destroying his outposts, encircling the rear guard and striking savagely at his main force. The withdrawal soon became a retreat, and retreat was in danger of degenerating into rout. The army of the Red Dragon was breaking up: every day, more of his followers skulked away into the hills to save themselves as best they could.

Now it came to pass that during the pursuit (see map), the corps commanded by the Good King advanced toward a fertile plain, a basin surrounded by mountains and lofty hills. There, at the intersection of two roads, a half day's march ahead of the corps front, the thatched roofs of a small village rose among the surrounding fields. If the Good King's forces could seize the village, they would deny the Dragon a good avenue of escape and force him to withdraw over mountainous country and broken trails—they might even cut off great numbers of his followers and slay them.

Only one road led to the village, and that was narrow and treacherous, winding giddily through mountains and dropping abruptly to the valley floor. The counsellors of the Good King, men of map-learning, well versed in rumor, considered it impassable. But then one night an aged peasant stumbled into camp. Soldiers of the Red Dragon had robbed him and driven him from his home. He swore he could guide a troop of men and mechanical monsters to the village in safety.

The Good King was the most famous warrior of his time. Hero of many a daring exploit and stricken field, he counted a major victory for every hair in his beard. This, he saw, was the crucial moment: a strong blow, now, might complete the demoralization of the enemy. The very perils of the trail might turn out to be advantages—in his haste, the Red Dragon might neglect to defend it. The risk was worth taking. He therefore directed one of his division commanders, the Black Baron, to make an armored thrust into the village.

The Black Baron was a man of iron will, of great ability and even greater self-confidence. Abrupt and imperious, he regarded the prerogatives and authority of command as his alone. No detail was too small for the Baron's supervision, no move so inconsequential that it did not require his approval. He surrounded himself with subordinates who knew how to obey but not how to command. So aggressive was his leadership that it concealed the poverty of leadership about him. No one foresaw what could happen to his division in his absence.

Now the Black Baron and his troops had only recently arrived on the front line. He was not fully aware of the weakness and confusion in the armies of the Dragon. Moreover, he was a little envious of the Good King's reputation, and inclined to be critical of his decisions. Not grasping the corps commander's plan

ROUTE OF THE GOOD KING'S DIVISION

for a single decisive stroke, he saw only the danger of his men being cut off behind the Dragon's lines. Thus he chose for the attack his reconnaissance company, a unit made up of mounted bowmen, lancers and a few mechanical iron monsters. Mobile and well able to extricate itself from possible encirclement, the company was hardly the right weapon for a strong armored blow.

Attaching this company to the regiment of Count Fidget, the Baron gave orders for what was now conceived as a tentative thrust. The choice could not have been more apt. Tentative was the only word for Count Fidget, who lost no time in consigning the mission and all its problems to Sir Charles, the commander of the reconnaissance company.

Sir Charles . . . but perhaps it is easiest to confess frankly that Sir Charles is the hero of our story, and everything a hero should be. He saw at once that the force assigned him was unbalanced and feeble. He pleaded with Count Fidget to reinforce it—especially to add supporting Infantry. The Count was greatly upset at the suggestion. He felt that such an action might be misunderstood—the Black Baron was sure to inquire. The most he could promise was two platoons of Infantry, an additional platoon of monsters and perhaps a squad of engineers. This formed a tactical force, and with this Sir Charles had, perforce, to content himself. And thus, between them, the Count and the Baron had diluted the Good King's vision of a mighty armored plunge to the thin reality of a reconnaissance patrol.

Sir Charles was to cross the division line early the next morning. He would probably return before dark. Intelligence of enemy strength and intentions was not available. In short, his orders were fuzzy and ill-defined. The only bright note was the appointment of Sir Adrian, a young and impetuous knight for whom Sir Charles felt an elder brother's affection, as commander of the attached Infantry.

Dawn broke clear and chill. A dozen medium-sized mechanical monsters stood waiting, their round eyes yellow in the early light. Sir Charles briefed the crews and Infantry with the help of his peasant guide and an antiquated map, while Sir Adrian bustled about checking ammunition and equipment. As soon as it was light enough to see the road, the monsters rumbled across the division line, on into enemy territory.

After a brief skirmish, they broke through enemy defenses. The surprise was complete. A troop of men-at-arms, huddled miserably at their breakfast fires, rose with harsh cries and scattered like a flock of crows. Further on, the column passed a deserted command post, and everywhere the litter of baggage and overturned carts spoke panic and confusion. Sir Charles pressed on, giving the

enemy no chance to gather against him, and the task force met no serious opposition. The only dangers arose from the narrow, twisting road. Guided by the old peasant, the column advanced cautiously, and the sun stood overhead when Sir Charles reached the crest of the mountains, and saw, stretched beneath him, the splendid panorama of the valley. A brief reconnaissance by fire revealed no enemy opposition, and the column rolled swiftly down, toward the crossroads and the town.

A strange hush held all the valley. Here and there, clusters of enemy scampered away across the fields or hid themselves in thickets. Of organized resistance there was no sign. It gave Sir Charles a creepy feeling—like breaking down a door to find the room behind it empty and echoing.

The village seemed deserted. Its houses were looted and broken, its pleasant gardens trampled. Except for the clank and rattle of Charles' machines, the whole town was silent as a dead mouth. Then suddenly, like a bird, a small and very ragged boy darted down the street, shrieking, "They've come! They've come!" As if from nowhere, townsfolk crowded the streets, shouting and waving tattered flags. The men dragged forth enemy soldiers who had hidden themselves in garrets and basements; the good wives spat at the prisoners and kissed every soldier they could reach. The guide—now a village hero—was lifted shoulder high, with much singing and stamping of feet.

Such a welcome was pleasant enough, but Sir Charles was aware of the perils of his situation—a half day's march from his own lines, connected only by radio magic that did not always work and a twisting ribbon of road that might easily be blocked by explosives or by a few resolute Dragons. Enemy soldiers and vehicles were now swarming in headlong flight across the foothills surrounding the valley. Sir Adrian, impetuous as ever, would gladly have pursued them to their very borders. But Sir Charles pointed out that barely enough fuel and ammunition remained for the return trip: pursuit was out of the question. Their mission extended only to the village. If they could hold there until reinforcements arrived, their triumph would be complete.

Accordingly, Charles reported to Count Fidget, requesting reinforcements and permission to remain in the village overnight. The Count was obviously delighted by their success, and just as obviously unwilling to take the responsibility of exploiting it. He must consult higher headquarters.

In a matter of moments, the Black Baron himself was on the radio, excited as a boy. He had ordered reinforcements—he was taking personal command of the operation—in fact he was on his

way to the village now. "Don't do anything till I get there!"

So they formed a tight defensive perimeter and settled down to wait. Minutes added into hours. Sir Charles checked and rechecked his positions; Sir Adrian stalked restlessly to and fro, beheading daisies with his sword; the sun sank low above the mountains. Attempts to locate the reinforcements by magic radio failed. When Sir Charles asked regiment for further orders, Count Fidget replied that division had taken command. Questions to division produced only evasive references to the Black Baron. And when Charles finally demanded to speak to His Excellency in person, it became clear that no one knew where he was—that radio contact with his chariot had been broken hours before—that the Black Baron had disappeared!

Sir Charles was now seriously worried. Were his reinforcements on the way? Well, no—they were searching for the Baron. Could he speak to the Baron's second in command? Unfortunately, that officer was making a terrain study of the reserve regiment's position. And the chief of staff? The chief of staff was in conference—with all the other members of the staff. It was at this point that Sir Charles began to shout.

The only satisfaction he received was the promise of a decision "soon." Then the radio mysteriously went dead. Dusk was already falling, and the soldiers busied themselves setting out torches to be lighted by the foot of an unwary enemy soldier. Sir Adrian organized a watch and assigned the guards. Sir Charles fiddled anxiously with the magic radio, trying to remember the incantations he had learned in Elementary Communications. Abruptly, the radio came back to life. It was Count Fidget calling: the column was to rejoin the regiment at once.

Sir Charles protested vigorously: the trail was dangerous by day, and it was now completely dark; moreover, the enemy had had time to pepper the route with obstacles. Why not wait for morning and reinforcements? But Fidget, for once, was adamant—he was only passing on orders from "higher up."

The abandoned townsfolk wept or stared dumbly as the monsters rumbled out of the village. The column felt its way cautiously up the winding track, the squads of one Infantry platoon guarding the front and rear and both flanks, while the other platoon mounted the broad backs of the monsters. Sir Adrian rode in a light chariot at the head of the column, Sir Charles a little further back. The monsters' eyes were dimmed to the merest flicker, and overhead, a full moon hid behind black clouds.

Without incident, they reached the mountain crest. They were far down the reverse slope and Sir Charles had begun to believe his day's adventure over, when, to his amazement, Count Fidget radioed an order to halt in place and set up a perimeter for the night. A cliff loomed on the left of the road, and to the right, the ground fell away into a gorge. Charles explained the physical impossibility of obeying. Fidget then ordered him to form his perimeter several miles back toward the village. Charles again protested. Finally, the Count agreed to let him continue toward friendly lines until he found a suitable area.

Sir Charles marvelled at these contradictory orders. But he had little time to ponder them. Just as the lead monster approached a narrow ravine, Sir Adrian radioed back a warning, and the column ground to a halt. The advance guard

The hero of our story . . .

reported something in the road ahead—a dark bulk which might mean an enemy obstacle—or a cave-in from the road bank—or only an abandoned cart. "I'll just step up there and take a look."

"Be careful, you young idiot!" exclaimed Sir Charles. But Adrian was already gone. Muttering phrases no hero can utter in print, Sir Charles leaped from his chariot. But even as he moved, there was a report and a sputter—a broken trail of reddish yellow sparks shooting up and up—and the crack of a bursting flare. The whole ravine sprang into light, and time stood still.

On the road ahead lay the overturned chariot of the Black Baron, every emblazoning on his coat of arms distinct and clear. Halfway to it crouched the advance guard, frozen like figures in a tableau. A few paces ahead of the main body of the column stood Sir Adrian. The whole world seemed to hold its breath. Then, from behind the abandoned chariot, a bowstring spoke once, conclusively. The young knight fell, face downward, upon the road. At the same time a volley of arrows fell among the advance guard. As if by a signal, the flare dwindled, flickered and went out. There was the crackle of brushwood under running feet, and evil laughter.

With an angry shout, the advance guard deployed to either side of the road and returned the enemy fire. Sir Charles barked orders into the magic radio. The monsters sprayed the roadside with bolts; deploying, the left flank guard added a hail of leaden arrows, while those on the right maneuvered to outflank the ambushers. But the enemy, a handful of bypassed Dragons intent only on harassment, melted into the night. They had done their work. Two of the advance guards were wounded, one severely, and

the able, resolute . . . Sir Charles

Sir Adrian lay in the roadway with an arrow in his heart.

There was nothing to do but to go on. Not long afterward, Sir Charles found an area for his encampment. No sooner was the perimeter set up, however, than he received orders to come all the way into friendly lines. The adventure was at an end.

But why had the task force been ordered to withdraw at all? It had brought panic to the enemy—had sent them fleeing northward and prevented them from blocking or destroying the road. Why was Sir Charles not reinforced and his success exploited?

The answer turns on the disappearance of the Black Baron. As soon as he heard of Charles' arrival in the village, the division commander set off up the road in his own high-powered chariot. Driving at breakneck speed, he soon reached the very ravine where the task force was later to be ambushed. Hardly had his chariot rounded the bend when it was greeted by a spate of bolts and arrows. Three stalwart military police, who formed his bodyguard, were riddled. With perhaps more speed than dignity, the Baron bounced into the ditch, followed by his aide and charioteer. The chariot skidded down the road and toppled majestically on its side. Scrambling up the bank, dodging and ducking, the Baron and his companions reached a small hollow, matted with vines and brambles, and crouched there, panting.

The brambles were excessively uncomfortable and arrows dropped like rain, so, pausing only to catch their breath, the three crawled and wriggled and clambered and climbed until they put three hills and a mountain stream between them and the enemy.

Some hours later, two scriveners who fought with words (a mystery known as

The Black Baron, a man of iron will . . .

Psychological Warfare) on their way to broadcast surrender instructions to the enemy, were flagged to a halt by three dusty figures which rose apparently from the ground at the side of the road. The squire in charge—a page fresh from ROTC—was naturally a little flustered to recognize in the dustiest of the three, his division commander. But the Black Baron wasted no time on amenities. "Take me back," he snapped. And that was all he said up to the time the awed and puzzled squire deposited him at his own headquarters.

The Baron found all in confusion. When he disappeared, no one had seemed able to take his place. No one knew what to do. Staff officers hurried to and fro, talking loudly but avoiding each other's eyes. Everyone forgot Sir Charles, and great was the embarrassment caused by his request for orders. His reinforcements were dispersed in search of the Black Baron. Nobody wanted to take the responsibility of sending more. After much confabulation, it was decided (the passive voice is useful in these situations) that Sir Charles' small force could not remain in the village overnight. The decision was made to recall him, the order issued. Immediately on his return, the Baron set to work to halt Sir Charles and organize another task force. But Charles was already on his way back, and Count Fidget's frantic orders to form a perimeter came too late.

How right the Good King's plan had been—how complete Sir Charles' success—plainly appeared the next day. The regimental tank company, with attached Infantry, returned to the village. No ambush delayed them. No cloud darkened the sunny sky. The enemy was gone.

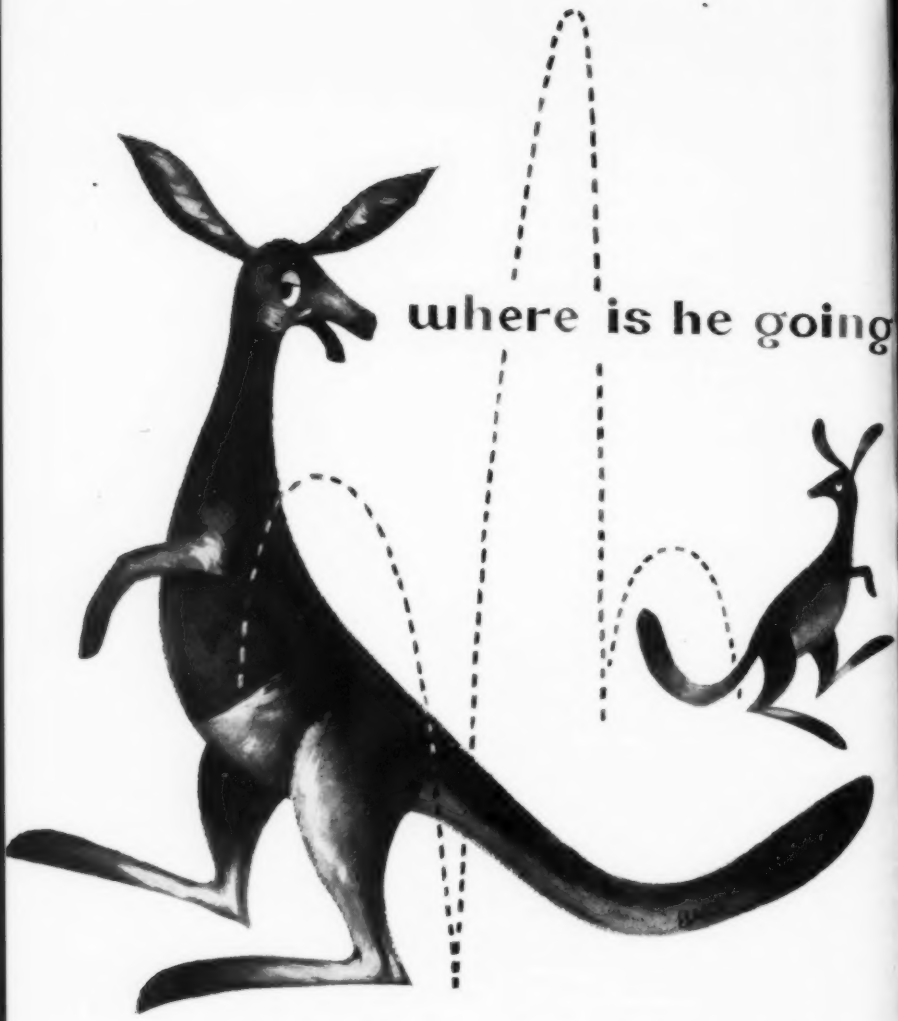
The Black Baron's Infantry poured into the village all that afternoon. Falcons of the Good King began to land on the nearby airstrip. Traffic became heavy through the streets. The town was free.

It would be pleasant to report that they all lived happily ever after. Perhaps they did. But Sir Charles took no joy of his success. He grieved for Sir Adrian, who would never slay a giant and marry a princess, as every young knight should. The Good King also grieved—grieved for the advance which should have been a decisive victory. He realized how much was lost by the Black Baron's failure to train his subordinates to take responsibility. But he himself was not without blame, and he could not bring himself to rebuke the Baron as severely as he deserved. The corps commander had not outlined his plan with sufficient clarity; he had not seen to it that his orders were obeyed. And for many a long day after, the Good King found the echo of a nursery chant drumming monotonously in his brain: "For want of a general, the battle was lost. For want of a general, time was lost. For want of a general—" And, resolving to instruct others in the lesson he had learned, he sat down and wrote a story . . . .

CAPT MARTIN BLUMENSON is that refreshing rarity—a scholar with imagination. He holds MA degrees from Bucknell and Harvard and taught history at the US Merchant Marine Academy and Hofstra College. He served as combat historian with the 3d and 7th Armies in WWII and as commanding officer of the 3d Historical Detachment in Korea. Currently assigned to the Office, Chief of Military History, DA, he is preparing *Breakout and Pursuit*, a volume in the official series, *The U.S. Army in WW II*.

"A fable usually illustrates some useful truth," writes Capt Blumenson. "What the ambush of a general does to the principle of command control is the main point of this one."

great ability . . . and even greater self-confidence



The Kangaroo hops around all day and has a lot of fun. But where is he going? He doesn't know — and neither do we.

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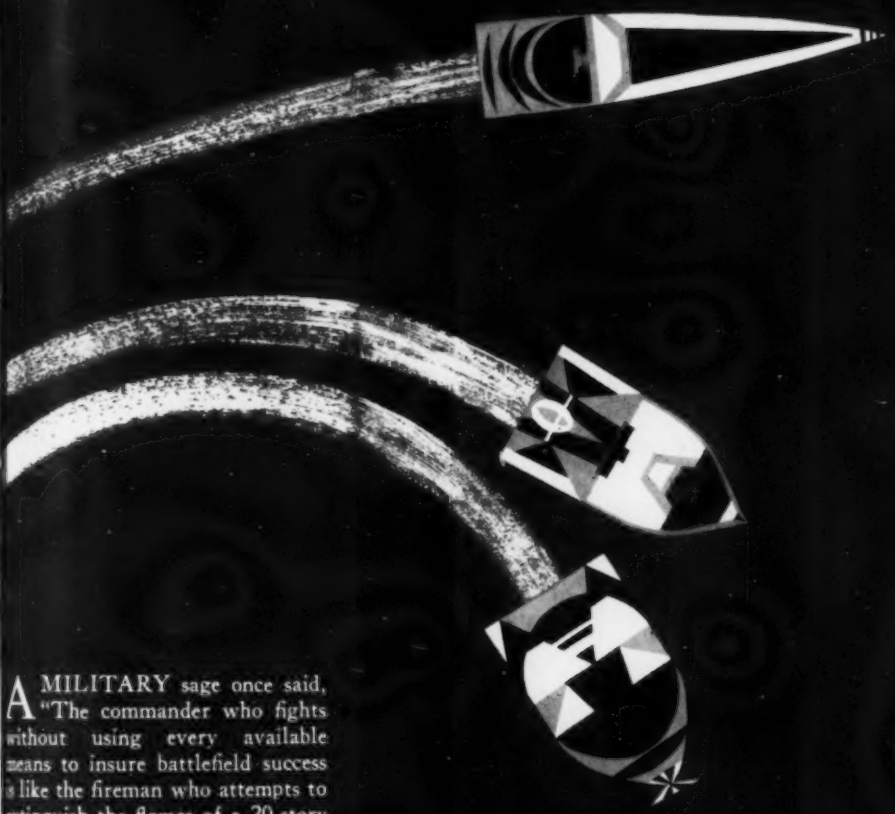

A MILITARY sage once said, "The commander who fights without using every available means to insure battlefield success is like the fireman who attempts to extinguish the flames of a 20-story building with a bucket of water."

Ridiculous? No more so than the Infantryman who fails to utilize the maximum effectiveness of the powerful and lethal fire support now at his disposal. As the quality of our supporting weapons improves, so must our *skill* and "know how" in employing them. We all recognize that skillfully employed firepower will often be the deciding factor in combat, but our recent experience in Korea indicates that too many commanders at battalion level failed to obtain maximum benefit from their fire support.

An analysis reveals that many were not completely cognizant of the organization, techniques and

Lt Col George H. Russell and Maj Charles P. Murray

methods with which to obtain the desired effectiveness from their fire support. This, and a subsequent article, are designed to supply this missing link in the chain of information. A logical place to start, we feel, is with the Fire Support Coordination Center—the center of fire planning and coordination within the Infantry battalion.

Fire Support Coordination Center*

What is its purpose? A properly organized FSCC will provide for the most effective use of all the supporting fires available (commensurate with the plans and needs of the battalion). Members of the battalion FSCC will usually include the following personnel:**

1. The artillery liaison officer (who is the Fire Support Coordinator).
2. An S3 representative (normally the assistant S3).
3. The heavy weapons company commander.
4. The battalion counterfire operations sergeant.
5. The heavy mortar company liaison agent.

While the above represents an FSCC for the conduct of a ground operation, its organization in an airborne operation would not be materially different. If an airborne operation is conducted beyond the range of light or medium artillery, or when artillery is not included in the force, the airborne force commander must rely on tactical air, long range artillery and guided missiles for support. Representatives of each of the available fire support elements would, of course, accompany the airborne force and operate in its FSCC.

Regardless of whether it serves an airborne or ground operation, a properly functioning FSCC will carry out its mission by: developing a detailed and coordinated battalion fire support plan; monitoring fire control nets to keep the commander constantly abreast of the situation; insuring that friendly troops are not endangered by supporting fires; serving as the battalion center for target intelligence and analysis (accurate and timely target information is essential to the proper use of supporting fires); and advising the commander on the most efficient (and effective) means of employing his available fire support in both the attack and defense.

During the planning phase of an operation, requests for fires to support rifle company fire plans are submitted by company commanders to the battalion FSCC. Here they are included in the battalion fire support plan.*

At the start of the actual operation we find that the battalion FSCC is no longer in the fire request chain. It is obvious that the requirement to promptly attack targets prevents forwarding "rush" requests for fire through a succession of FSCC's. To expedite matters, rifle companies send their fire requests (during the actual operation) directly to the FDC of the unit (81mm mortar platoon, 4.2 inch mortar company and artillery battalion) designated to deliver the fire. These requests are usually channeled through forward observers operating with the company.

*In an article entitled "Fire Support Planning" (*The Infantry School Quarterly*, April 1954), there is an excellent description of the FSCC. Since then, however, certain refinements have been made. To bring these refinements into proper focus, it is necessary to repeat some of the information relating to the FSCC.

**This list will be increased, in some instances, by a forward air controller or naval gunfire liaison officer (if with the battalion) and by a representative of any fire support unit attached to, or in support of, the battalion (such as attached AAA AW).

*The battalion fire support plan will appear as an annex to the Battalion Operation Order.

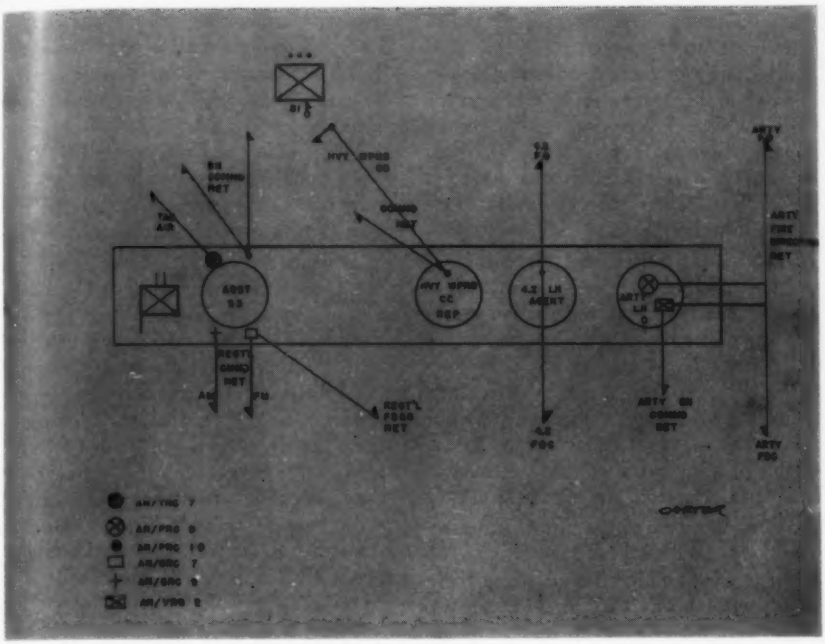

Figure 1

Whenever possible, such requests should be monitored by the battalion FSCC to keep the battalion commander informed of the use of available fires. Monitoring also insures that proper consideration is given to the augmentation of fires and prevents the delivery of fires on friendly troops and installations. The FSCC does not, however, interfere with company fire requests except in emergencies.

Communications

It is apparent that adequate communications are essential to the successful operation of an FSCC. To meet minimum requirements, experience shows that we need channels to:

1. The commander (or FDC) of each fire support unit.
2. Commanders of each company in the battalion.
3. The battalion commander.
4. The regimental FSCC.

The parent organization of each fire support and staff representative in the FSCC provides him with the necessary means of communications, with the exception of the heavy mortar company liaison agent. The latter must be provided an EE-8 telephone and AN/PRC-10 radio by the battalion being supported, since current heavy mortar company TE's make no provision for this equipment. When a forward air controller comes to the battalion, he brings with him radios provided by the direct support artillery battalion.*

The necessity for monitoring fire requests, which we referred to earlier,

*The Air Force formerly provided its own communication and personnel. Today, it furnishes only the forward air controller (officer). All enlisted men, transportation and communication are now furnished by the army (division artillery units).

creates no special communication problem within the battalion (see Figure 1). The artillery liaison officer is, of course, equipped to handle all requests by FO's on the artillery fire direction net. The heavy mortar company representative monitors the heavy mortar fire control net with the AN/PRC 10 provided by the supported battalion.

Information related to targets of opportunity and planned concentrations fired by the 81mm mortar platoon is forwarded through the heavy weapons company representative in the FSCC by telephone, or over the company's own command net. Sufficient radios exist within the battalion to permit constant monitoring of both battalion and regimental command nets from the battalion CP.

When members of the FSCC leave the command post for forward areas (or when moving) they normally keep their radios with them. This practice permits continuous monitoring by these individuals regardless of their location.

In addition to radios, the FSCC should have wire facilities paralleling its radio nets. This can be achieved by connecting the FSCC with the battalion switchboard, splicing into the heavy mortar FO net and by using the artillery wire net. This system enables the FSCC to monitor fire requests transmitted through artillery and heavy mortar channels and assures telephone contact with the 81mm mortar FDC, the regimental FSCC, and the company and battalion commanders.

Location

Since the CP is the hub of communications within a battalion, the FSCC is usually located there. When located within the CP, it should be situated near the operations section to facilitate coordination with the S2 and S3. We must recognize, however, that the FSCC is not an office—complete with desks and fancy equipment. The coordination to be accomplished by its personnel can be achieved over the hood of a jeep, at an OP, or along a road or trail. Where these people meet is not important—the only important point is that the fire support representatives get together.

During the conduct of an operation, for example, the members of the FSCC may operate forward of the CP with the battalion commander, at an OP, or with the forward elements of the battalion. At least one member (usually the assistant S3) should always remain in the battalion CP. Regardless of whether he is on reconnaissance or some other duty, each member maintains contact with the fire support agency he represents as well as with the other members of the FSCC.

Common Fire Support Target Numbering System

A common system has been adopted for identifying targets (or areas) where fire support is needed. It will insure the full use of our fire support capability and greatly expedite massing of fires. The system to be used is prescribed by the highest echelon controlling fire support agencies (usually corps).*

We can expect a corps SOP to provide identification of corps units which control fire support agencies. Such a system might resemble the example given below:

VII CORPS SOP

Concentration Identification Symbol	Unit
A	10th Infantry Division
B	2d Infantry Division
C	3d Infantry Division
D	1st Armored Division
E	Corps FSCC
F, G, H, etc.	Other units

*FM 100-5, Par. 241K (Sept 1954).

Each division SOP should also provide similar indentification symbols for each of its organizations controlling fire support agencies. The following system might be used:

10TH INFANTRY DIVISION SOP

Concentration Identification Symbol	Unit
AA	*85th Infantry* (FSCC and 4.2" mortar FDC)
AB	1st Battalion, 85th (FSCC and 81mm mortar FDC)
AC	2d Battalion, 85th
AD	3d Battalion, 85th
AE	25th FA Battalion (D/S Bn)
AF	*86th Infantry*
AG	1st Battalion, 86th
AH	2d Battalion, 86th
AI, etc.	Other units

Every regimental and battalion SOP should include a similar system. Each should indicate the assignment of blocks of numbers—for use by their respective FSCC's and for allocation to subordinate FDC's or attached fire support units. For example, the 1st Battalion, 85th Infantry, may allocate AB 1 through AB 499 to the battalion FSCC and AB 500 through AB 999 to the 81mm mortar platoon FDC. The numbers assigned should not usually exceed three digits, i.e., up to 999, although larger numbers may be used if the situation requires.

It works in the following manner. Let's take an assumed concentration, say AB 326. The first letter in the code is the one assigned the division by corps, which, in the case of the 10th Division, is A; the second is the one assigned by the division to a subordinate unit, which, in this instance, is the 1st Battalion, 85th Infantry, whose code is AB. Thus, we can tell immediately that AB 326 is concentration number 326 planned by the 1st Battalion of the 85th.

These SOP's should pertain to both prearranged fires and to the fires used on targets of opportunity (see Figure 2).

Prearranged Fires

The battalion FSCC assigns concentration numbers to all fires *planned* by battalion (including those requested by its companies) for fire support under control of battalion and higher echelons. All of these appear in the battalion fire plan, which is forwarded to the regimental FSCC for coordination. The regimental FSCC, in turn, reconciles or eliminates any conflicts or duplication that may exist in the battalion plans. The battalion fire plan is usually sent to the regimental FSCC in fragmentary form by telephone or radio. However, when sufficient time is available, it should be sent in overlay form. Concentrations which originate in the regimental FSCC to support the regimental plan are given numbers from the regimental FSCC block.

When common numbers are assigned, they are disseminated (by overlay or other suitable means) to all echelons requiring the information. Within the battalion, pertinent concentration numbers should be provided down to rifle platoon level.

Targets of Opportunity

Fires delivered on targets of opportunity (in areas where concentrations were not previously planned) are given a concentration number by the FDC of the fire support agency delivering the fire. This FDC then informs the battalion FSCC, which, in turn, notifies all other interested parties. This information will include the concentration number(s), adjusted coordinates, a description of the target and other pertinent data.

To exploit the system fully, the FSCC must know the existing capability of massing *all* fire support means at *all* times. The battalion fire support plan should include a graphic representation

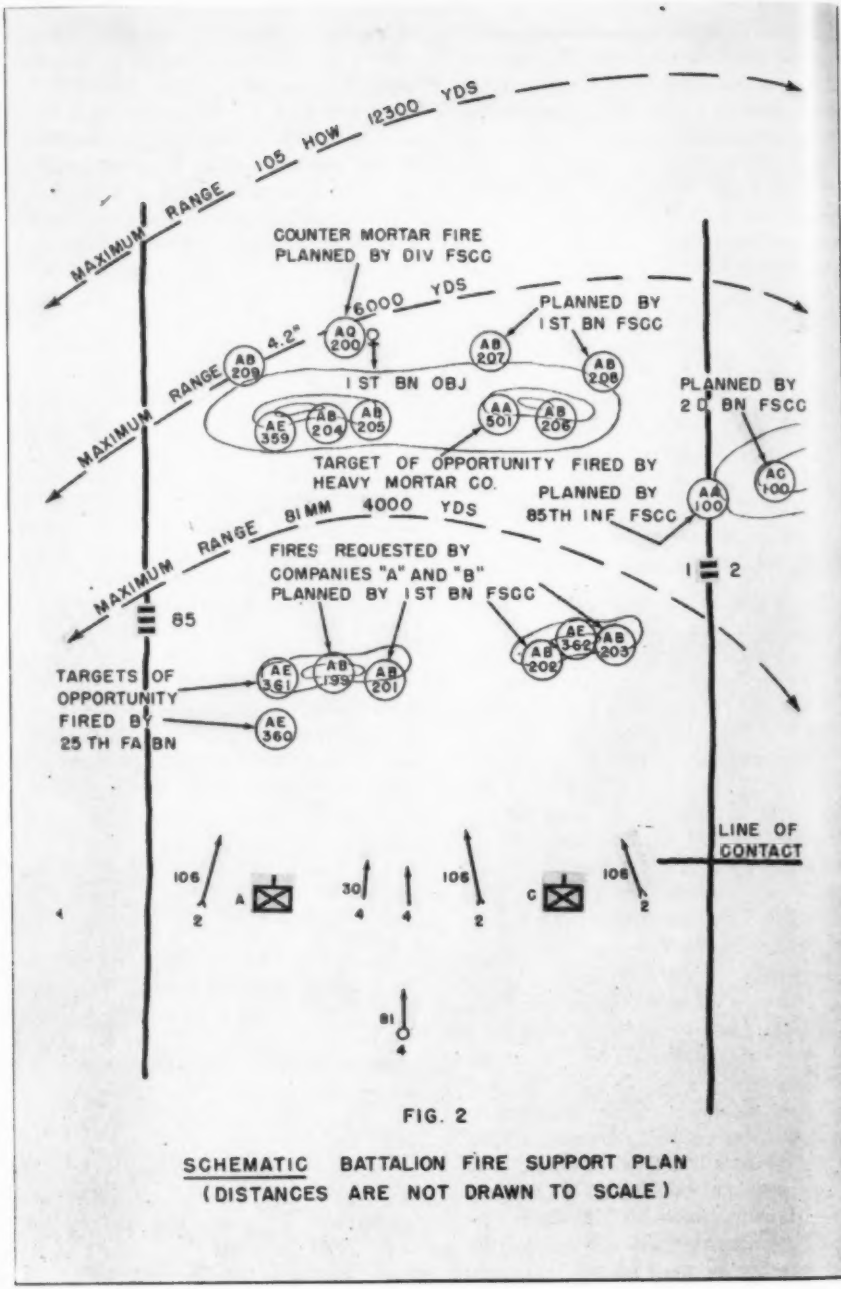

FIG. 2

SCHEMATIC BATTALION FIRE SUPPORT PLAN
(DISTANCES ARE NOT DRAWN TO SCALE)

of the zones of fire of fire support units controlled by (or supporting) the battalion and its parent regiment. For example, we see in Figure 2 that concentration AB 201 is within range of the 105mm howitzers, the 4.2" mortars and the 81mm mortars. The fires of these weapons, as well as the battalion direct fire weapons, can be massed on this target.

Fire support agencies will report any position changes to the FSCC of their parent unit. This information will, of course, be disseminated to all interested FSCC's and unit commanders.

Though we have discussed the application of the system to indirect fire weapons, it has equal application to direct fire weapons. The fires of each are included in fire support plans.

Target Designation

A *concentration* is shown by this conventional symbol: (AA 201) and is not drawn to conform to any prescribed scale. The *center* of the circle indicates where fire is to be placed. The actual area covered by the fires will depend on the type and number of weapons firing on the concentration. The identification number within the circle is as prescribed by local SOP. (It is well to remember that any weapon within range, and having the desired firing characteristics, may deliver fire on the concentration.)

The *barrage* symbol is drawn to scale to cover the area designated for a particular weapon. The symbol should look like this: [25 FA-A] Note that the identity of the unit to do the firing is placed within the symbol. In this case, it is "A" Battery of the 25th FA Battalion.

Value of the System

The common numbering system has many obvious advantages over those used in the past. For example, since the numbers assigned to index each location for future use are the same for all fire support agencies (whether organic, attached or supporting), platoon or company commanders can call for these planned concentrations with relative ease. They have only to remember *one* number regardless of the type or caliber fire they need.

The consolidated fire support plan allows the lower unit commander to use one overlay (or marked map) instead of the several required in the past. In addition, the common target numbering system affords an excellent means for reporting locations of friendly troops (such as patrols) or enemy elements.

Atomic Fire Planning

It is anticipated (at present) that plans for use of atomic fire support will be prepared at echelons higher than division. The unparalleled destructiveness of these fires dictate that factors not normally included in fire support planning be considered. Some of these are:

1. **Safety.** The measures necessary to insure troop safety will be determined by the planning organization's target analysis. These will be given to battalion commanders and will include restrictions on the occupation of forward areas.

2. **Signal.** The plan will embrace a signal to be used (when necessary) to enable friendly troops to take cover when atomic fire is used.

3. **When and where atomic weapons are to be employed.** Although this decision is (presently) made at higher levels, it is anticipated that battalion commanders may recommend employment. It is also felt that they will participate in the planning to the extent of seeking and reporting possible targets. The battalion commander must insure the safety of his troops and may plan his own maneuver to exploit the advantage accruing to him when the weapon is used.

4. **Secrecy.** It is imperative that the enemy be given no advance warning that would permit him to take measures that would reduce the effectiveness of our atomic fire.

5. **Possible effect on battalion fire planning.** Since atomic fires do not result in 100 per cent casualties, the use of conventional fires (and fire support planning) will not decrease. Because of the need for greater unit dispersion, fire support planning at battalion level will possibly be given even greater emphasis. Fires will have to be planned to neutralize enemy weapons and personnel not destroyed by atomic fire, to cover intervals between units and to support a continuation of the attack through or around the affected area.

The precise role of each echelon cannot, at this time, be specifically spelled out or prescribed. Experience and greater familiarity with atomic fire planning will, of course, be the determining factor. There is no doubt in our minds that the use of atomic fires will call for much more highly skilled planning and an infinitely greater amount of coordination at all echelons than has ever been known in the past.

LT COL RUSSELL AND MAJOR MURRAY, both seasoned combat commanders, have a first hand knowledge of the value of properly used fire support.

Lt Col Russell served in the Pacific during WW II and, more recently, was a battalion commander (2d Div) in Korea. His co-author, Major Murray (OCS April 1943), was in Europe during WW II where he served as a company commander with the 30th Infantry.

As we said earlier, our mission has been to supply the missing link in the chain of fire support information. It is important that we put this information into practice. No commander who has ever witnessed the effect of well conceived and coordinated fire support will fail to use it. It is the commander himself who must be sure that all available fires are used properly in carrying out his mission. His operations officer and his fire support coordinator can give him invaluable assistance but the responsibility is his alone.

We feel that the commander who fails to extract the last iota of effectiveness from his fire support is like the man who purchases an automobile insurance policy after an accident.

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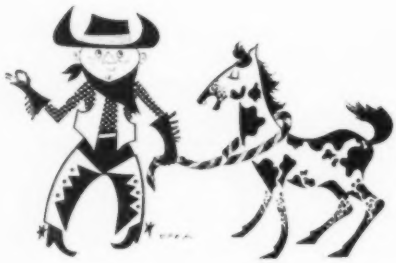
HORSE THIEVES WERE HUNG



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